

Embedded Reflection on Public Policy Innovation

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EMBEDDED REFLECTION ON PUBLIC POLICY INNOVATION

A relativist/pragmatist inquiry into the practice of innovation
and knowledge transfer in the WaterINNOvation program

REFLECTIE OP BELEIDSINNOVATIE

Een relativistisch/pragmatistisch onderzoek naar de innovatiepraktijk
en kennisoverdracht in het WaterINNOvatie-programma

Proefschrift

ter verkrijging van de graad van doctor aan de Universiteit van Tilburg, op gezag van
de rector magnificus, prof. dr. Ph. Eijlander,
in het openbaar te verdedigen ten overstaan van een door het college van promoties
aangewezen commissie in de aula van de Universiteit,

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door

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geboren op 5 april 1966 te Velsen.

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For my sisters, Jennifer and Paulina

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At TNO, in the former institute of TNO Inro, Theo Reijs and Henk Puylaert encouraged me to start this research endeavour, but not without urging me to think things through about what it might mean for my professional and personal development. Due to managerial changes at Inro that had put the objective of my research and my intended approach to it in danger, I felt compelled to pack my things and leave for TNO STB, where Adriaan Slob provided me a warm welcome to his team.

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Writing a PhD thesis is a fairly lonely job, even in a vibrant environment as the TSPB. This ‘loneliness’ is partly because it is sometimes hard to really express what you are trying to examine. What kept me going in these moments were my experiences with the professionals who inhabited the WINN program at the DG RWS between 2004 and 2006. Their stories, doubts and successes were a continuous source of inspiration to me. Through reflection, we shared emotions, amazement, challenges and annoyances with the state of affairs in Dutch water management innovation. Especially the creative, yet daring endeavours of Jan Dirk van Duijvenbode have revealed the intricacies and sensitivities of performing innovation in a public policy domain that is riddled with tradition and technology.

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These three professional environments are framed by my social environment that is composed of family and friends. The involvement of my social environment varied from making regular inquiries into my progress, up to the point where it became annoying (“Is there still no date planned on which I can see you wearing a suit?”), to downright concerns about the workload I had taken on. The combination of working full time at TNO, writing a thesis and, in 2008/2009, buying a new house, organizing its reconstruction and moving my stuff, often led to lifted eyebrows and raised worrisome questions. You were right, I won’t do it again!

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There is enough said about the so-called ‘black hole’ that awaits PhD graduates. Fortunately, Sandra and Ron have provided me with all kinds of new adventures to keep me from falling in. Thank you for sharing your lives with me; our future will be warm and bright!

Finally, working at TNO for more than eleven years and doing research with and for fellow knowledge-workers at other knowledge-oriented organizations, has led to the following observation.

It appears to me that getting your job done as a professional of innovation is seriously scrutinized by managerial and organizational rationales. The only way to keep innovation afloat is by being mildly subversive. This can be achieved through the provision of sound and ‘seductive’ stories and, once in a while, some unpredictable, concealed actions that are too attractive to negate, even for management. Perhaps this thesis represents both.

Tilburg/Breda, juli 2009.

Executive summary

This thesis examines the impact of reflection on the practice of conceiving of and organizing public policy innovation for water management and the processes of knowledge transfer. The reflection is provided for a specific community of practitioners: the professionals involved in the WaterINNOvation program (WINN) of the Directorate-General of Rijkswaterstaat (the DG RWS) of the Dutch ministry of Public Works and Water Management.

The objective of this innovation program is the promotion of durable and novel solutions for the (long-term) challenges in water management for which the DG RWS is responsible. This objective is largely inspired by the anticipated consequences of climate change on the existing approaches to Dutch water management. Instead of blocking water through solutions grounded in civic and hydraulic engineering, the spatial accommodation of water must become the basic principle. This conversion in water management is commonly referred to as a shift in the policy paradigm that must subsequently be translated into a new regime for this public policy domain.

The professionals involved in WINN anticipated that reaching the program's objective would be no easy task. It was expected that the network dynamics in the domain of water management, as well as the evolving institutional requirements from the DG RWS, would put much strain on their efforts. They agreed that regular reflection was needed to learn from their experiences. Learning could guide them in changing and, if possible, improving their innovation practice and knowledge transfer.

Through an action-science approach, I assumed the role of embedded researcher in the WINN program. Together with the professionals I formed a community of inquiry for collaboratively identifying their needs for reflection and translated them into a learning course. In this learning course, reflection was provided through master classes and reflective sessions, such as intervision and case consultation. The impact of the learning course was evaluated through in-depth interviews with the participating professionals. The findings of these evaluations were used to adjust the learning course to their evolving needs for reflection.

The community of practitioners and the evolving practice(s) are grounded in the specific institutional context of the DG RWS, one of the most prominent actors in Dutch water management. The study's emphasis on practice and practitioners, as well as on the specific context to which they refer, frame this study in the pragmatic tradition. Therefore, the impact of reflection on the practice of innovation and knowledge transfer is interpreted through the pragmatic concepts of learning-in-practice and boundary spanning.

The reflection provided by the learning course seems to have had an important impact on the development of the individual professional's innovation practice. Through reflection, the individual professionals entered into a zone of proximal development, indicating that their existing way of conduct was gradually evolving in alternative practices. Impact on the development of a communal and shared innovation practice is limited, with one exception: the collaborative development of a storyline about enhancing the legitimacy of the efforts in the WINN program. The story served as a guideline for readjusting the objective and subsequent activities in WINN. The story represents the professionals' efforts in making sense of what was going on around them and translating these dynamics into a new substantive focus of their innovation program.

Reflection as provided in the aforementioned learning course stimulates the transfer of (new) knowledge among the WINN professionals. The learning course also enhances the acquisition of external knowledge by those professionals. In contrast, reflection seems to have only limited impact on the transfer of (new) knowledge from the WINN program to its organizational (the DG RWS) and network contexts (the domain of water management).

As far as interpreting the impact of reflection through the aforementioned pragmatic concepts, it is clear that reflection stimulates learning-in-practice because it helps to identify the possibilities for change and improvement and guides their actual and targeted implementation in practice. Additionally, reflection helps to identify the orientation of knowledge transfer in the innovation program and dissect it into knowledge objects, knowledge workers and knowledge-producing activities that span organizational boundaries.

The added value of this study for public administration is situated in the methodological and contextual dimensions that emerged during its progress.

The methodological dimension of this study is captured by my proposition that embedded research can be described as 'the science of being there'. The embedded researcher must be capable of being part of the community of practitioners and, in turn, this community must allow and make effective use of the embedded researcher's 'being there'. It is obvious that mutual trust is an important precondition for this type of research.

Next to this, I argue that embedded research is well suitable for developing (some form of) reflective practice in the implementation of complex policy programs and projects. Reflective practice can support policy professionals by keeping their program or project in tune with the contextual dynamics.

The contextual dimension of this study is revealed in the legitimacy issue that is (apparently) attached to a program of public policy innovation. The case study shows that the

legitimacy of public policy innovation is largely dependent on the support of other actors for the renewal of policy objectives or measures and/or the debate about renewing them. The innovation of policy objectives, measures and/or debate can be reached through rhetorical and action frames. Innovation is often referred to as 'trying something new'. This relates to the action frame. However, the state of affairs in water management innovation indicates that talking about trying something new is equally important.

The final remark related to the contextual dimension is about the diverging competences that, in my view, are needed to deal with the problems of context, and thus being capable of practicing public policy innovation. The competences required are 1) being able to work in the fragmented domain of science, policy and practice, 2) possessing productive skills of connectivity, and 3) being capable of collaboratively constructing and conveying new meanings. These are vital competences for a professional of public policy innovation and can perhaps be united in the idea of agility. 'Agile' professionals are capable and ready to balance interests, knowledge and resources for public policy innovation with 'enlightened opportunism' as a fundamental attitude.

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Chapter 1

Introduction to “Embedded Reflection on Public Policy Innovation”

1.1

AN INTRODUCTION TO MY THESIS

Over the past several years, in my research work at TNO, I have organized, facilitated and evaluated many participatory research projects aimed at supporting policy processes in spatial planning, transport and traffic management and/or water management. These projects were mostly initiated by government agencies for diverging reasons: they wanted to pursue an open style of governance, they wanted to ‘organize’ acceptance for new policies, they looked for mediation of an emerging conflict with stakeholders, or they searched for ways out of a dead-locked situation. In some cases participation was ‘forced’ or negotiated by stakeholders and/or other government agencies who wanted to be heard in the policy process.

In almost all projects, participation with stakeholders includes the collaborative generation, exchange, application and evaluation of knowledge about the perceived cause and effect of the problematic situation, as well as its procedural consequences and contextual characteristics. And, after being involved in several of these participatory research projects, I could not help but wonder how these collaborative processes would affect the actual practice of the public policy professionals involved. During these projects I observed changes in the professionals’ attitudes, expectations, opinions and behavior, at least during the course of the organized interactions. In order to make sense of these changes, I searched for an explanation and found refuge in the concept of learning. Did these interactions have additional impacts, next to the intended collaborative production of a research report and/or a policy plan? And if so, could these additional impacts, provisionally captured by the concept of learning, be deliberately promoted or provoked? I wondered whether the observed changes would be helpful in supporting or advancing the professional practice of the individuals involved.

This question is grounded in my observation that, nowadays, many public policy professionals increasingly struggle with their (formal) role when engaged in participatory processes that evolve from collaboration with stakeholders. Their formal education, managerial instructions and formal work descriptions (including work targets) do not appear to match with the competences they need to perform in the interaction. Formally described practices seem to have a difficult relationship with the actual performance that is required in ‘cross-boundary’, collaborative processes.

I thought it would be worthwhile to study learning in the public policy domain, and since learning is attached to people, my focus should be on public policy professionals who are active in participatory policy analysis. Is it possible to organize and facilitate learning for public policy professionals with the aim of supporting or advancing their practice of participatory policy analysis? And, what would the impacts of this learning be on the practice of the professionals involved?

The intended study should center around these types of questions. The next step was to obtain a suitable case study that allows the conception, organization, facilitation and evaluation of a learning process for public policy professionals who are involved in participatory research projects.

In the fall of 2003, our group of course members reconvened for catching up and discussing each other’s progress in professional life. One of my personal challenges during the course was whether I would enter a PhD-research project or not. At the meeting I made clear that I had enrolled in a PhD-study with the provisional objective of examining learning processes and their impact on policy practices in the public policy domain. One of my fellow course members replied, “Then you are the guy I need to talk to.” As it turned out, he had been recently appointed executive manager for the innovation program WaterINNOvation of the ministry of Public Works, Transportation and Water Management. This so-called WINN-program must initiate innovation in water management and is executed by the ministry’s Directorate-General of Public Works and Water Management¹ (here after abbreviated to the DG RWS). One of the ambitions of the program team was to put learning at the heart of the program, without having a clear picture at that time what this learning should include or how it should be organized or facilitated.

Through a series of talks with members of the innovation program, the objectives of the learning needs gradually became clear. The ‘learning efforts’ should strengthen the program while it was being developed, by supporting the practice of the professionals involved. This support should be brought about by 1) reflecting on the evolving innovation practice of in-

1 In Dutch: Directoraat-Generaal Rijkswaterstaat.

novation, 2) acquiring external knowledge, and 3) exchanging generated knowledge and experiences among professionals inside and outside the innovation program. And here it was: a challenging case study for ‘reflecting on the impacts of reflection on practices of public policy innovation’. The next pages express the approach to and outcomes of this study.

In this chapter, the following aspects of my provisional research assignment of organizing, facilitating and evaluating learning in the WINN program will be discussed: the policy domain of water management, the changing policy paradigm in water management, the DG RWS as a key actor in water management, changes in the institutional context, ambiguities for innovation in water management, objectives of the WINN program, the innovation practice in WINN, an assessment of the need for learning in WINN, and the rationale and research objectives for this study.

1.2

THE POLICY DOMAIN OF WATER MANAGEMENT

This section describes the recent developments in the policy domain of water management. These developments follow societal and bio-physic trends that shape the objectives of water management and have led, accordingly, to a need for innovation in this policy domain.

1.2.1

THE CONCEPT OF INTEGRATED WATER RESOURCES MANAGEMENT

The policy domain of water management is perceived as one of the oldest and most thoroughly institutionalized domains in the Netherlands. It is said that without systematic thinking through future water management challenges and taking pro-active measures in managing it, our country would be half its current territory (see: Duijn & Drogendijk, 1999). The acknowledgment of the importance of actively dealing with water in order to safeguard our social and economic functions leads to the development of typical Dutch institutions, the water boards. Water boards are recognized as the oldest administrative institutions in our country. Around 1,300 water boards were founded in the lower, western parts of the Netherlands with the objective of managing and controlling the water system in a certain region or area. At first, water boards were private institutions, often founded by groups of farmers who fulfilled tasks that exceeded their private interests. Based on this public function, water boards became a specific form of the Dutch government institutions later on. Water boards are often referred to as the fourth governmental layer, next to national government, provinces and municipalities. In the middle of the nineteenth century, water boards were established in the higher, eastern parts of the Netherlands. Nowadays, 27 water boards accommodate our spatial functions through managing the water system, performing as a

functional, administrative body. Water boards are responsible for regional water management, whereas the ministry of Public Works, Transport and Water Management manages the parts of the water system that are specifically designated as national waterways. The objectives of and tasks in managing the national waterways are described in Section 1.3.1.

The regional orientation of the water boards is visible in their geographical focus. Water boards' territories are roughly defined by the catchment areas they (try to) manage, thus crossing the geographical territories of provinces and municipalities. Next to water boards, municipalities have specific tasks in local water management. Municipalities are responsible for collecting and draining off waste water and precipitation, mainly through construction and maintenance of the sewer system. Provinces are primarily responsible for the management of ground water. Private companies are responsible for producing drinking water, within the guidelines of the provinces and water boards. Most drinking water companies are owned by provinces and municipalities.

The efforts of the aforementioned policy actors in water management are developed within the policy framework of the national government. On the national level, three ministries are engaged in policy making for water management. The ministry of Public Works, Transport and Water Management is the coordinating actor for water policies and water legislation. The ministry of Housing, Spatial Planning and the Environment is responsible for policy making and legislation for drinking water, environmental policies and spatial planning. The latter is important because watermanagement represents a significant spatial function in the Netherlands. The ministry of Agriculture, Nature and Food Quality governs the policy making and legislation for nature development and agriculture, two spatial functions that are beneficiaries of effective water management.

With the introduction of the concept of integrated resources water management² (cf. Van Rooy, 1998; Mostert, 2006), the aforementioned governmental agencies strove to improve their cooperation in water management. Until the early 1980s, water boards, provinces and municipalities were not used to coordinate their water managing activities. As a consequence, the impact of investments in water management was fairly low and the ecological resilience of the water system deteriorated (cf. Duijn & Drogendijk, 1999). It was acknowledged that the quantitative and qualitative aspects of water management should be more integrated because they interact in a profound way. In addition the components of the entire water system, such as surface water and ground water, as well as sediments, soil, banks and shores, are interrelated in a complex way. In 1985 the ministry of Public Works, Transport and Water Management published the report "Living with Water; Towards Integral Water

2 In Dutch: integraal waterbeheer.

Policy” in which a systemic approach to water-related problems was introduced. According to Mostert (2006: 20) the ministry stated that the water systems approach “gives priority to the water system... The approach aims at optimal coordination of the wishes of society with regard to the functions and the functioning of the water systems... by means of an integral consideration of (these wishes and) the potential of the systems”. Mostert (Ibid.) indicated that in 1989 integrated water resources management became the national policy framework for the domain of water management in the Netherlands.

Integrated resources water management³ acknowledges the coherence between water systems, its societal functions (e.g. recreation, transportation and agriculture), and relevant policy domains, with spatial planning and environmental policy as the most prominent examples. Although no one can be against a systemic approach to the water system that is proposed in integrated resources water management, the development and implementation of this concept has not been easy. The reasons for this are the cultural and institutional constraints that are rooted in water management traditions. In the past, numerous physical interventions in the water system have been made that currently hinder integrated and integral water management measures⁴.

During its extensive history, water management has developed specific cultural characteristics that are not favorable for integrated water management, to say the least. First of all, the water system is subdivided into sectors that are addressed by separate policy actors, including the aforementioned government agencies, and specific legislation. These separate sectors are dominated by a technological perspective on water-related problems. There is a tendency to look for technological interventions (hydraulic engineering) first, before considering other types of policy options. Technological interventions tend to be strongly grounded in quantitative modeling. Without quantitative argumentation, it is hard to reach agreement on taking measures. It is obvious that this sectoral approach to the water system, as a cultural manifestation of Dutch water management, is the exact opposite of integrated water resources management. Despite these difficulties, over the years integrated water resources management has become the guiding policy framework for water management, requiring policy actors to collaborate in policy making processes and implementing policy measures. The integrative concept has contributed to the perception of the Dutch water management domain as an extensive network of policy actors, such as water managing authorities, private sector firms, knowledge institutes and other stakeholders. The exhortation for more

3 Integrated water management tends to be influenced by the concept of sustainability (see: Our Common Future, Report of Brundtland Commission, 1987) because it equally advocates a coherent approach of ecological, economic and social aspects for deciding on (policy) objectives and measures.

4 The protection of Zeeland and western parts of Noord-Brabant by closing off several parts of the Scheldt estuary had an impact on other functions, such as fishery (shellfish), water quality and ecological values.

cooperation between policy actors in integrated water resources management has contributed to the further ‘networkification’ of the water management domain.

It should be noted that the concept of integrated water resources management bears the connotation that it is capable of correcting or improving the inadequacies of the existing sectoral or compartmentalized organization⁵ of water management tasks. An integrative approach to the water system’s components may be perceived as panacea for flaws in ascribed its governing and administrative structures, such as the variety of water managing authorities in our country. However, as the Raad voor Maatschappelijke Ontwikkeling (abbreviated to RMO) noticed, compartmentalization of government tasks has considerable benefits because it allows for a more pragmatic approach to societal problems that are based on redundancy. The RMO (2008: 11) argues that “compartmentalization recognizes multiple perspectives and interests”. Compartmentalization can prevent a one-sided perspective on societal problems by facilitating a thoughtful consideration of the perspectives and interests involved. It is obvious that water management may benefit from these characteristics of compartmentalization because it is capable of acknowledging the diverging interests that are at stake.

1.2.2

CHANGING THE POLICY PARADIGM: A NEED FOR INNOVATION IN WATER MANAGEMENT

As may be clear from the previous section, the dominant approach to protect our way of living and our possessions from the threats of water has a rather sectoral nature and is aimed at banning, or at least controlling, water from places it was not appreciated, such as urban and agricultural areas and industrial sites. In 1993 and 1995, high water levels in our main rivers, the Rhine and Meuse, had once again shown that the water system was still capable of challenging our water managing infrastructure. In 1995, 250,000 people and 1,000,000 livestock had to be evacuated from lower areas along those rivers, causing much anxiety among the general public, politicians, policy makers, water managers and researchers. It is generally recognized that unsafe situations will become more frequent in our estuary-situated country, due to climate change. Higher temperatures will result in more intense precipitation and more severe storms, in combination with periods of extreme draught. Higher temperatures cause glaciers and polar ice to melt and lead to expansion of ocean water⁶. These factors will cause sea levels to rise. The expected impacts of climate change must be ‘answered’ by alternative water managing policies and measures. The traditional approach of heightening and strengthening our protective system of dikes, dams and levees will, in the long run, not

5 In Dutch: sectorale of verkokerde organisatie.

6 Warm water has a larger volume than cooler water.

suffice in dealing with the estimated sea level rise, the expected increased force of the waves and the larger discharge of the river system. In order to deliver the necessary protection in vulnerable areas, water systems must be provided with more space to run freely, instead of being contained. As a consequence, the water managing authorities, such as the DG RWS, have to develop alternative approaches⁷ that are better adjusted to the changing characteristics of the comprehensive water system in the Dutch delta (estuary).

The principal policy framework, Water Policy for the 21st Century,⁸ (hereafter abbreviated to WB21) advocates the accommodation of flooding and the provision of water systems with more space instead of ‘blocking it’ with technology. The alternative principle adage for water management is expressed in the strategy of retaining, storing, and discharging water⁹. This means that water management authorities have to change the existing engineering policy regime that is aimed at ‘normalization of the water system’ (cf. Van der Woud, 2006) to a different policy regime for dealing with water challenges that have a (more) ‘spatial orientation’¹⁰. In addition, the new policy regime should be based on the idea of anticipation instead of reacting to unfavorable water situations. As a consequence of the perceived change in the policy paradigm for water management initiated in WB21, new concepts are needed for accommodating it. Innovation in the existing policy regime must see to its development and implementation. The perceived policy paradigm shift is acknowledged in one of the innovation programs that was initiated to ‘conceive and organize’ the desired innovation, the innovation program WaterINNOvation. The paradigm shift is paraphrased in the following

7 Currently these approaches are based on three components. First, the DG RWS, together with the water boards (in Dutch: waterschappen), maintains the security level of the system of dams, retaining walls and levees. Every five years this system is assessed (tested) against the standards of the Water Retainment Act (in Dutch: Wet op de Waterkeringen). Based on the findings, the DG RWS, in cooperation with the water boards, draws up a project plan for the required improvements of the protective system. The deputy-minister then informs Parliament and Senate about the project plan. Second, on behalf of coastline management, the DG RWS each year compensates the erosion of the coastline by breaking waves and sea currents, through considerable suppletion of sand. This task is also based on the aforementioned Act. The main objectives of coastline management are to maintain the coastline at the approximate location of 1990 and to preserve the amount of sand along the coast. The key aim is to maintain a natural and sandy coast along the Dutch shores; only at some locations can the coastline be fixed by concrete constructions. Third, the DG RWS aims at creating and maintaining a robust principal water system. In 2005, a quick scan was executed to assess the storage capacity of the national waterways, in the light of potential flooding or hindrance by high water levels, due to climate change. The 2005 assessment showed that the principal water system is functioning well, with only a few doubtful locations.

8 In Dutch: Waterbeleid voor de 21ste Eeuw.

9 In Dutch: vasthouden, bergen en afvoeren.

10 The recently published report of the second Delta Commission (September 3, 2008) tends to reverse this paradigm back to the old paradigm of solving water challenges solely with technical concepts and constructions instead of using spatial planning as directive framework – an interesting observation by the chairman of the Dutch Water Association (in Dutch: de waterbond), dr. P. van Rooy, in the Radiol morning news, prior to the formal presentation of the Delta Commission’s report.

quote, expressed in the publication ‘Directing Inspiration – the themes of WaterINNOvation¹¹’ of this innovation program (2004: 14-15):

... apparently we have lived in the luxury of leaving water to the water managers without having to think of it any more. But we can no longer ignore water and will be, in one way or the other, affected by it. We have reached our limits. We must make way, for each other and for the water. The choices which will become necessary will reach beyond the mandate of the water manager. They concern a future for The Netherlands living with water, in some cases with much more water, but sometimes with much less... Perhaps it is about time for alternatives for our country’s relation with water, which will enable choices that are adjusted to the future, and not grounded in the past. Perhaps an opportunity occurs here to search for well-considered, and robust alternatives... This would not only be innovative, but we would realize a trend break if we would decide on our future with water, apart from our past with it.

This elaborate quote¹² refers to the anticipation of deviating from the existing policy trend that is vested in the ‘old’ traditions of water management, thus letting go of the existing policy regime and replacing it with a new one. The publication also refers to shifting societal values with regard to the position and role of water management in our society. The changing values function as a driver of the perceived need for a new policy paradigm, expressed in WB21. The next step is to translate the new paradigm into objectives for innovation in water management. The required innovations must result in more ecologically sound and cost-effective solutions that must make the water system robust for its new and still evolving requirements. In a way, water management organizations are engaged in a process of reframing (Laws & Rein, 2003): the current policy frame of stemming and containing floods is being replaced by a new policy frame of ‘accommodating flooding’ and allowing water systems to play a more dominant role in our spatial planning. The desired turn to a more spatially-oriented approach to future water challenges will, in my view, further intensify the ‘unfolding networkification’ of water management because in spatial planning actors, interests and resources meet, and become intertwined. Being able to play a role in these networks of public policy, actors will be an important challenge for traditional water managing authorities such as water boards and regional agencies of DG RWS.

Acknowledging that ‘controlling’ water as the key principle for ‘keeping our feet dry’ is no longer feasible, has led to the perception that a shift in the existing policy paradigm for water management is needed. This ‘policy paradigm shift’ must now be translated into alternative approaches. To accommodate deliberate innovation for water management, one of the key

11 In Dutch: Richting aan inspiratie – de thema’s van WaterINNOvatiebron. My translation.

12 As may be expected, this quote is replete with the idea that everything in life relates to water.

policy actors in Dutch water management, the DG RWS of the ministry of Public Works, Transport and Water Management has initiated the WaterINNOvation program. DG RWS wishes to play a significant role in water management innovation. This key actor is examined in the next sections because it is the host organization for this study's case study.

1.3 DG RWS AS KEY ACTOR IN DUTCH WATER MANAGEMENT

With its business plan¹³ 2004-2008, the DG RWS attempted to address the Cabinet's desire to reform the government sector as well as the general public's demand for better public services. Top-level management of the DG RWS wanted to meet these demands by improving the quality of the internal administrative organization and a more output and client-oriented working style. The business plan covered the organizational changes that were perceived to be necessary following the changes in its societal environment. The business plan (2004: 7) indicated that

the DG RWS has to transform into an executive agency¹⁴ of the Ministry that, by assignment of the Minister and the deputy-Minister, designs, builds and maintains the principal infrastructural networks¹⁵ for traffic and transportation. In addition, DG RWS is responsible for a safe, clean and client-oriented principal water system¹⁶ and for protection against flooding. For these tasks, the DG RWS generates and manages reliable and user-friendly information.

Being an executive agency, the DG RWS's key objective was the implementation of, and specifically not the development of, policy guidelines which belongs to the domain of another Directorate-General of the Ministry, DG Water. In its business plan (2004: 8), the DG RWS describes denominates four key tasks¹⁷:

- Management of infrastructure networks and traffic on the national roads;
- Management of infrastructure networks and traffic on the national waterways¹⁸;
- Integrated water management of the national waterways;
- Supply of knowledge and expertise for executing the tasks above.

13 In Dutch: Ondernemingsplan 2004-2008. Titel: Een Nieuw Perspectief voor Rijkswaterstaat – Doorpakken, wel degelijk. Het Ondernemingsplan is in januari 2004 uitgebracht.

14 Uitvoeringsorganisatie vertaald met executing agency.

15 Hoofdnetwerken vertaald met principal infrastructure networks.

16 Hoofdwatersysteem vertaald met principal water system.

17 Kerntaken vertaald met key tasks.

18 Hoofdvaarwegen vertaald met national waterways.

1.3.1

LEGISLATIVE FRAMEWORKS FOR THE DG RWS' WATER TASKS

As indicated earlier, the DG RWS considers itself to be the principal managing authority for road and water networks. The WINN program aims at innovation of the current water managing tasks and practices. Based on the business plan, the water managing tasks of the DG RWS are twofold: 1) protection against flooding, and 2) providing sufficient water quantity and quality for all types of users. Protection against flooding is the most important task for the DG RWS. But the execution of this task is currently 'under construction' due to the expressed need for innovation in water management (see Section 1.2.2).

Providing sufficient water quantity and quality in a country that is cut through by many rivers, creeks and lakes requires specific attention, especially when this country is one of the largest estuaries on the European continent. The water system has different types of users with different or even conflicting interests. All water masses are interconnected by surface and ground water systems. The DG RWS is responsible for managing the arteries of this network, the principal water system, by regulating water levels (water quantity) and the chemical composition (water quality), in close cooperation with other ministries, provinces and water boards. An important policy framework for regulating the water quantity and quality is the European Water Framework Directive (hereafter abbreviated as WFD), although the main focus until now is on water quality. The WFD has become the principal policy guideline for Dutch water managing authorities. The WFD aims to establish sound ecological and chemical conditions in so-called 'strategic water masses', such as river basins and lakes, that each country has to identify. The ecological and chemical conditions are translated into standards that have to be monitored by the water managing authorities. Only under severe restrictions is postponement or reduction of these standards allowed. Another component of the legislative framework for the DG RWS's tasks is the implementation of the national Water Act¹⁹. This act must offer a new legislative framework for comparing and weighing water-related interests. It must provide water managing authorities with a stronger administrative position and should decrease the number of decisions they have to make and administrative burdens they have to bear.

19 In 2005 the DG RWS assessed the draft Water Act on its effectiveness, efficiency and risks. It was concluded that the Water Act will integrate various and sometimes outdated acts.

1.4

CHANGES IN THE INSTITUTIONAL CONTEXT: NATIONAL GOVERNMENT ‘UNDER CONSTRUCTION’

In 2004 an action program called Different Government²⁰ was launched with the aim of reforming Dutch National Government. It had four objectives: 1) better service to the general public, 2) fewer rules and regulations, 3) better organizational quality of the governmental offices, and 4) renewal of relationships with provinces and municipalities. The ministry of Public Works, Transport and Water Management has taken up these objectives in the so-called Change Assignment of V&W²¹. With this change assignment, the ministry is attempting to implement a modernized working style for its Directorates-General, in the spirit of the objectives of the Different Government Program.

1.4.1

CHANGING THE WORKING STYLE OF THE DG RWS

The Business Plan 2004-2008 of the DG RWS is an interpretation of the ministry’s change assignment. The Business Plan expected the following impacts on the working culture of the DG RWS. First, the DG RWS has to transform its working approach in a service-oriented working style²². Second, the DG RWS has to develop a more professional role division with the private sector, dominated by the principle of ‘private sector, unless...’²³. Both intended impacts are briefly described.

First, a service-oriented working style is perceived to be necessary because the general public is demanding more freedom of choice in public services and independence from government interference. Next to this, the general public demands more and better services for its tax money. Users of road infrastructure want to travel swiftly, safely and well-informed to their destinations. A service-oriented working style requires a pro-active and co-thinking attitude of the DG RWS, solving problems in road and water networks in a professional way with recognition of the needs of its clients. To achieve this, a different and more intensified form of cooperation with other organizations responsible for road or waterway management should be brought about. This new cooperation must be based on equality.

Second, the principle of ‘private sector, unless...’ connects to the ambition of the DG RWS that it wants to focus more on its core business of network management. This ambition presupposes that tasks that are only remotely related to the core business will be undertaken

20 In Dutch: het programma Andere Overheid. This program started in December 2003 and was terminated in May 2007. The program has been deemed unsuccessful. According to members of Parliament as well as scholars, the well-intended objectives were never fully met. See, for example: <http://digitaalbestuur.nl/magazine/kamerbreed-ontevreden-over-andere-overheid>

21 In Dutch: De veranderopgave van V&W.

22 In Dutch: publieksgericht werken.

23 In Dutch: markt, tenzij...

with reserve. The need for a clearer role division between the DG RWS and the private sector was instigated by the Parliament Survey 2002/2003 that investigated the fraudulent relationships between contracting firms amongst each other and with the DG RWS, in acquiring and executing large-scale infrastructure projects (commissioned by the DG RWS)²⁴. The survey led to the conclusion that government should revise its relationship with private sector firms. To do so, the DG RWS had to transform itself into a professional client for commissioning contracts with private sector firms.

Following the recommendations of the parliamentary committee²⁵, the DG RWS intended to resume a more distant and business-like position with its contractors, in an attempt to stimulate competition in the market for contracts, restore trust and bring relations with the private sector as a whole back to normal²⁶. This transformation had to be brought about by the Directing Board for Construction²⁷, in which the DG RWS participates. In its new role as professional client, the DG RWS had to re-focus on guaranteeing the public interest (see: Business Plan, 2004: 10). The renewed relationship with the private sector was required because of the aim of the national government to contract out more work to businesses and firms, mainly with regard to construction and maintenance of roads and waterways. As a consequence, the DG RWS had to focus more on its core business, i.e. network management. Through an intensified use of private sector firms, the DG RWS is expected to work more efficiently, increasing its added value for society. It was assumed that through innovative contracting agreements, the DG RWS would need considerably less personnel²⁸. It was expected that, in 2008, the principle of 'private sector, unless...' would become rooted in the working practice of the organization. With a the new attitude, all organizational units of the DG RWS should be able to act as 'a professional client' to the private sector, giving shape to the desired change in role divisions. The Business Plan (2004: 27) showed a number of characteristic changes that had to be made in order for them to act as a professional client. These changes are listed in the table below.

24 It was discovered that the DG RWS did not have an eye on 'misconduct' with private sector firms in acquiring contracts from government agencies. In some cases this 'misconduct' seemed to be 'provoked' by the DG RWS' way of conduct. The organization recognized that it had to make serious efforts to regain trustworthiness with its network partners.

25 In Dutch: Parlementaire Commissie Bouwnijverheid, 2003.

26 Jaarbericht Rijkswaterstaat, 2005.

27 In Dutch: Regieraad Bouw.

28 The objective was that, in 2008, eighty percent of all public works innovative contracting-out agreements must be implemented in consultation with the private sector. The DG RWS would focus on the initial stage of the design and implementation process. Price and quality of the desired products for network management, including integrated water management, would be the DG RWS's main evaluation criteria. In turn, the private sector would have an opportunity to redefine implementation processes to its own views and creativity.

From (old culture)	To (new culture)
In-house expertise about innovation and design	Stimulus for innovation by the private sector
Detailed assignments and designs	Assignments on rough guidelines
Lowest price	Balance between price and quality and performance
Decentralized purchasing	Centralized purchasing
Pluriform contracts	Uniform, standard contracts
Technical specifications	Functional specifications
Acting ‘superior’	Professional partner

Table 1 Characteristics of the desired changes for acting as professional client

The desired changes for achieving a service-oriented working style and the role of professional client for the private sector are expected to have considerable consequences for the organizational culture of the DG RWS. These changes require different attitudes and competences. The Business Plan (2004: 17) anticipated the following changes in attitudes and competences:

- From ‘focus on own (technical) needs’ to ‘focus on needs of (network) users (i.e. clients)’.
- From ‘reinventing everything all over again’ to ‘cohesion and cooperation’.
- From ‘acting as superior’ to ‘acting as professional client and buyer’.
- From ‘supply-driven knowledge’ to ‘demand-driven knowledge, related to key products’.
- From ‘wanting to possess all knowledge’ to ‘adequately organizing knowledge (externally)’.
- From ‘a limiting administrative process’ to ‘a supporting administrative process’.
- From ‘avoiding (staffing) problems’ to ‘tackling (staffing) problems’.

The DG RWS’s Business Plan (2004: 17) acknowledged that

traditionally DG RWS is perceived to be a solid, expert-driven, technologically-oriented and loyal organization. These traditional values in its organizational culture and perception should be maintained. However, the new focus on the general public as main client, as principle user of the networks, the DG RWS is responsible for their management, and for acting as professional client for the private sector, new elements to the organizational culture must be added.

According to this document²⁹ the desired redesign of the organizational culture had to be achieved by the following changes. First, the the focus should shift to the users of the net-

²⁹ The Business Plan continues by identifying the preconditions for achieving the desired change in the organizational culture. Some of the preconditions address political and financial support for executing the

works that are to be managed. The keywords must then be: service-oriented, connective, communicative, responsive and innovative. To meet these new requirements, the undesirable culture of ‘organizational islands’³⁰ within the DG RWS must be abandoned. Instead, the DG RWS must develop into one organization with employees who help, support and motivate one another. Second, the organizational culture must develop into a culture that enables employees and managers to set realistic targets and discuss each other’s responsibilities in meeting them. According to the Business Plan, this culture can be reached by adopting the plan-do-check-act principle. Both management and employees should develop the appropriate competences for simplification of working routines and transparent governance. Working style and competences must be adjusted to these new elements in the DG RWS organizational cultural in order to fulfill its new tasks.

It is my proposition that it is somewhat naïve to assume that adding new elements to an organizational culture that is rooted in the water managing traditions of Dutch society which have been developed in more than a century can be done at-will and overnight. Changing the organizational culture cannot be governed and implemented intentionally deliberately. However, the Business Plan presupposes that the organizational culture of the DG RWS can be changed in a four-year period, through aiming at new objectives and tasks. This is a rather instrumental view of organizational culture: objectives and tasks follow culture, which contrasts with the view that culture is a result of a number of interrelated organizational artefacts, such as mission and tasks, management style, rewarding systems, ‘historic practices’, etc.

1.4.2

INNOVATION AS SPECIAL FOCUS OF ATTENTION FOR THE DG RWS

In the Business Plan, innovation is described as “a vital activity for the development of the DG RWS into a modern government agency” (2004: 16). The Business Plan indicates that

building on currently running innovation programs such as Roads to the Future³¹ and WINN, in 2008 the DG RWS must be transformed into a leading, innovating organization. Its innovation programs will set an example for other European network managers.

business plan, while others point to internal and external acceptance and willingness to make the desired change. Internal acceptance should be reached along the formal (managerial) lines of authority, through which management should set the right example in showing the appropriate attitude and behavior. External acceptance is sought through active support by governmental partners of the DG RWS regarding network management, and by the private sector for the new role division in building and maintaining road and water networks. Lastly, explicit attention was drawn to the importance of effective human resource management, new management styles and improving the mismatch in staffing.

30 Organizational units that do not cooperate and/or communicate.

31 In Dutch: Wegen naar de Toekomst (WnT).

The specialist agencies of the DG RWS are likely to play a prominent role in achieving this goal. To provide them with a solid foundation fundament, they will be subject to the first international knowledge position audit (in 2004/2005) to benchmark their performance with similar organizations. In addition a renewed cooperation between universities and (international) research institutes should produce their first revenues and provide easier access to new, well-educated employees.

The Annual Report 2005 of the DG RWS explicitly mentions the objectives and progress of the DG RWS's main water innovation program, WINN. According to the Annual Report of 2005, with WINN, the DG RWS sets out “to explore new sustainable and innovative combinations of spatial functions and water safety, in cooperation with society, science and private sector” (2005: 37). WINN should organize the so-called ‘demand-driven innovation’, that is, innovation driven by the need for new water management practices, expressed by internal stakeholders (e.g. regional agencies) and/or external parties. The DG RWS focuses on changing the way of ‘thinking about water management on the long term’ by ‘acting on the short term’³². WINN must experiment with thinking differently about water and water management in the future and demonstrate these different thought lines by innovating the current practice of water management³³. Next to WINN, the DG RWS has additional programs to stimulate innovation. WINN focuses on larger innovations that will alter water management in the future. The innovation program for mobility, Roads to the Future, also has a long-term focus. But there are also innovation programs that look to improvements of the actual, day-to-day practice in managing and maintaining waterways and hydraulic works. These smaller innovation programs, such as Stuurboord and O&I-projects, will not be addressed in this chapter, but merely illustrate that positioning innovation within the DG RWS is a challenge in its own right. Before initiating a new proposal for innovation, a professional has to identify for which innovation program the innovation is suitable, based on the question of whether the intended initiative (innovation) will alter water management in the long run or whether it is a mere adjustment of current practices.

32 In Dutch: lange termijn denken, korte termijn doen.

33 For example, WINN has developed and tested three different techniques, the results of the WINN pilot project Inside, for strengthening existing dams along rivers and polders. Another example is the alternative use of abundant (river) sediment to build mounts suitable for spatial functions (housing, recreation, etc.), the result of the pilot project terpen van baggerspecie. A last example are two unsolicited proposals, handed in by two different private sector firms. The first is aimed at developing artificial reefs to enhance coastal safety along the North Sea shore, the second intends to achieve a quicker and more natural way of suppletion of sand along the coastline, the innovation pilot projects Kunstriffen by Royal Haskoning and Ecobeach by BAM. These pilot projects must be implemented in the short term, thus challenging the current practices, and must contribute to changing the policy framework for water management on the long term.

1.4.3

CHANGING THE LANDSCAPE OF WATER INNOVATION:
REORGANIZING THE SPECIALIST AGENCIES

The Annual Report 2005 of the DG RWS indicates that, in order to keep the Netherlands accessible, clean and safe, innovation and new coalitions are necessary. Innovative breakthroughs are mainly sought in sharing and bringing together available knowledge. One of the supporting actions is the establishment of the new research institute Deltares³⁴ that was founded on January 1, 2007. The DG RWS coordinated the founding process because a large number of its specialist agencies (i.e. RIZA, RIKZ and DWW) will constitute this new institute, together with the research institutes GeoDelft, WL/Delft Hydraulics and portions of TNO Built Environment and Geo Sciences. The remaining portions of the 'old' specialist agencies³⁵ will be transformed into four new institutes, in addition to Deltares. The table below shows the reorganization schemes of the specialist agencies of the DG RWS.

Old agencies	New agencies
Research divisions of RIZA ³⁶ , RIKZ ³⁷ and DWW ³⁸	Deltares
Remaining divisions of RIZA, RIKZ and DWW	Water Agency ³⁹
AVV ⁴⁰	Agency for Traffic and Shipping ⁴¹
AGI ⁴²	Agency for Data and ICT ⁴³
Civil Engineering Agency ⁴⁴	Civil Engineering Agency

Table 2 Transforming the specialist agencies

- 34 Deltares has been up and running from the second half of 2007 and has to become an internationally prominent research institute in the field of water management and engineering in delta areas (estuaries). The institute focuses on integrated water management, water safety, hydraulic engineering, management and maintenance of hydraulic constructions, ground water, management of (undeep) soil and sediment, geology and the spatial planning of infrastructure and hydraulic works. Deltares will have approx. 750 employees and cooperate with the Technical University of Delft and Utrecht University. It is intended that Deltares will strengthen the generation and valorisation of innovative, delta-related knowledge and technologies for large-scale problems in water management. The low Dutch delta area (estuary) cannot be occupied in the long run without continuous development and implementation of innovative knowledge and technologies. Deltares must stimulate the creation of this expertise and thus enhance the innovative capacity of our society with regard to these issues. In addition, the international competitive position of the Dutch private sector (in Dutch: de BV Nederland) in hydraulic engineering and constructing can be improved as well.
- 35 RIZA, RIKZ, DWW, Bouwdienst, AGI en AVV.
- 36 In Dutch: Rijksinstituut voor Integraal zoetwaterbeheer & Afvalwaterbehandeling. National Institute for Inland Water Management and Waste Water Treatment.
- 37 In Dutch: Rijksinstituut voor Kust & Zee / National Institute for Coastal and Marine Management.
- 38 In Dutch: Dienst Weg- en Waterbouw / Road and Hydraulic Engineering Institute.
- 39 In Dutch: Waterdienst.
- 40 In Dutch: Adviesdienst Verkeer & Vervoer, translated in: Transport Research Centre.
- 41 In Dutch: Dienst Verkeer & Scheepvaart (DVS).
- 42 In Dutch: Adviesdienst Geo-informatie & ICT / Institute for Geo-information and ICT.
- 43 In Dutch: Data & ICT Dienst (DID).
- 44 In Dutch: Bouwdienst.

WINN was expected to be positioned in the new constellation as follows⁴⁵. The management of the innovation programs is supposedly one of the tasks of the Water Agency, the actual innovation projects should then be implemented by Deltares. All innovation programs will have their workplace in the Future Center, the national information center of the DG RWS.

1.5

AMBIGUITIES FOR INNOVATION IN WATER MANAGEMENT

The preceding introduction to the Dutch water management domain shows that three types of actors (government agencies, private sector firms and knowledge institutions) together constitute the institutional context⁴⁶ in which change and innovation must be conceived and organized. With regard to innovation in water management each of these actors, equally show initiatives to launch new ideas. However, there is something peculiar about these innovation initiatives. As we have seen in the introduction, water management is currently ‘digesting’ a perceived shift in the policy paradigm. It seems that most of the actors involved accept and support the shift from blocking water to accommodating water, advocated in WB21. The interpretation of this policy paradigm shift is the current driver for innovation in the existing policy regime in water management: how can we translate this paradigm for subsequent policies, objectives, tasks, measures and technologies? And more importantly, what does the new policy paradigm mean for our societal functions and activities?

The innovation ambiguity is that most actors involved acknowledge the need for interpreting and translating the policy paradigm shift but show evidence of confusion, inertia and resorting to existing practices instead of trying out new ones (see: Hekkert et al., 2006). Actors involved in innovation of the existing policy regime tend to wait for each other to make the first move. The WRR (2008b: 183) calls this phenomenon ‘catch 22: everybody is waiting for everybody else.’ In the meantime, the actors tend to harass one another, and not to mention the general public, with yet another new innovative idea. In addition the existing

45 At the time of the case study of this thesis (June 2004–December 2006), the position of WINN in the new organizational context was not clear yet. We know now that the intended position of WINN has become reality.

46 All three actor types have reached a significant level of advancement. In the private domain, the cluster of private sector firms, mainly composed of hydraulic engineering firms and construction companies, has evolved into a significant business sector in the Netherlands. This business sector is recognized abroad for its level of (technological) advancement. In the public domain, many government agencies are active in water management, and over time, a separate government layer has developed (i.e. the water boards) that is entirely devoted to water management. In the knowledge domain, water management and water construction technology are the research focuses of many knowledge institutions, such as the Technical University Delft, TNO, GeoDelft and WL/Delft Hydraulics. The knowledge domain is ‘mirrored’ by knowledge-oriented agencies of the DG RWS. As indicated earlier, the new knowledge institute Deltares was formed by merging some of the knowledge institutes with some of the research-oriented agencies of the DG RWS, stipulating the perceived importance of clustering water management research.

institutional context of water management tends to frame the current innovation practices. The technological dominance prevails, knowledge is mainly developed in a sectoral, mono-disciplinary way, and the knowledge infrastructure is composed of institutes that (remain to) have their own financial resources. The consequence of this institutional context is that innovations tend to be incremental and conservative because they mirror the culture of this context and mostly have a technological and engineering-oriented nature.

This introduction shows that the cultural characteristics of the water management sector are deeply rooted in the state of affairs in innovation. This is acknowledged in an analysis of the deficiencies in the existing innovation system in water management (InnovatiePlatform, 2007)⁴⁷. These deficiencies tend to center around the following issues:

- There seems to be a deficient connection between demand and supply of relevant knowledge for water innovation;
- The current procedures for putting public tenders⁴⁸ are not capable of accommodating innovation initiatives. Knowledge and experience to deal with or surpass these procedures are not present in actors involved;
- There seems to be insufficient opportunity to execute experiments within the existing legislation and regulations for water management;
- There seems to be a 'reward' for risk avoidance instead of risk-taking behavior;
- There seems to be a lack of readiness at the regional water managing agencies in acting as launching customers for innovative projects. The ability to settle the intellectual property of innovative ideas and techniques seems to be limited;
- Government procedures are perceived to be too complex, causing inertia for seizing opportunities for innovation.

These deficiencies have to be completed with the omnipresent challenge of governing complex institutional contexts, such as public policy networks, with the aim of bridging diverging interests. The complex institutional context of water management innovation is acknowl-

47 Innovation Platform, working group for water innovation, *Winning with water – action plan water innovation*, 2007. It is the government's aim to see the Netherlands among the international top 5 in higher education, research and innovation. To achieve that goal, the government set up the Innovation Platform in 2003. The Platform brings together key players in the knowledge economy: experts from politics, business, research and education. Prime Minister Balkenende is the platform's chairman. To foster innovation in the water sector, the Innovation Platform will assume the role of icebreaker, catalyst and promoter. After putting innovation on the map in the Netherlands, in this second phase the Innovation Platform's activities should lead to innovative water projects. The activities it intends to launch are described in the action plan 'Winning with Water'. Cf. the website of the Innovation Platform, see: <http://www.innovatieplatform.nl/index.cfm/t/water/vid/D8F5D4B7-0CB1-4A41-4BB33BFB98765FC0>

48 In Dutch: aanbestedingsprocedures.

edged in the Innovation Letter Mobility and Water⁴⁹, drawn up by the Innovation Council Mobility and Water⁵⁰. According to this document (2006: 7) “innovations are brought about by an interplay between a large number of actors who, together, constitute the innovation system. In this system each actor has its own role”. The Innovation Council has based its thoughts on several renowned institutions that perceive an innovation system as a set of roles that the actors involved in innovation should have to play. The following arguments have been brought forward:

each sector has its own, idiosyncratic innovation system. Based on collective knowledge about the innovation system at hand, the government has to define its role(s) in interaction with its innovation partners. In addition, a specific set of (policy) instruments has to be developed for supporting the defined roles in the designated innovation system (see CPB, 2002⁵¹, and OESO, 2005⁵²).

the innovation system should be perceived as an interactive model in which the government defines its own role(s) in relation to other actors. The government does not define innovations itself but guides them by monitoring and following up societal developments (see SCP, 2001⁵³).

for tackling large societal challenges, such as environmental issues, safety and security and traffic congestion, as a government, it is necessary to be capable of providing direction and room for innovations that are needed for improving the efficiency and effectiveness of government policy (see SER, 2003⁵⁴, and Innovatieplatform, 2005⁵⁵).

through putting out innovative public tenders government can coordinate investments and formulate functional specifications for (potential) contractors (see SER, 2003). As a consequence the government should adopt a role as inspiring network partner in the innovation system (see AWT, 2004⁵⁶).

49 In Dutch: Innovatiebrief – Innovatie mobiliteit en water: voor een bereikbaar, schoon en veilig Nederland. Ministerie van Verkeer en Waterstaat, juni 2006. The Innovation Letter was drawn up by the Innovation Council Mobility and Water that was initiated by the ministry of Public Works, Transport and Water Management in 2004.

50 In Dutch: Innovatieberaad Mobiliteit en Water. The Innovation Council is composed of key persons from the domains Traffic, Construction, Logistics, Air Traffic and Water Management.

51 CPB, De pijlers onder de kenniseconomie – Opties voor institutionele vernieuwing, 2002.

52 OESO, Governance of Innovation Systems, 2005.

53 SCP, Bedreven en gedreven. Een heroriëntatie op de rol van de Rijksoverheid in de samenleving, 2001.

54 SER, Interactie voor innovatie. Naar een samenhangend kennis- en innovatiebeleid, 2003.

55 Innovatieplatform, Grenzen zoeken, grenzen verleggen, 2005.

56 AWT, Tijd om te oogsten! Vernieuwing in het innovatiebeleid, 2004.

These ideas have been translated in a role division between four types of actors: the ministry, private sector firms, knowledge institutions and other government agencies. Apparently the Innovation Council Mobility and Water presupposes that other actors such as the media, NGOs, international players (other countries) and the (opinion of the) general public will not play a role in innovation processes in the policy sectors of Mobility and Water Management. Perhaps this presupposition reveals the Council's perception of innovation as something that has to do with policy, knowledge and technology and, not for example, something that refers to changing societal preferences, values and meanings.

In line with this role division between the identified actors, the ministry of Public Works, Transport and Water Management, which the DG RWS is part of, has defined eight roles it wants to play in the two innovation systems that are the objective of the aforementioned Innovation Letter – Mobility and Water. These roles are: 1) knowledge director, 2) knowledge broker, 3) governor, 4) legislator, 5) tendering organization, 6) launching customer, 7) financier, and 8) facilitator of (innovation) experiments. According to the Innovation Letter, the choices that the ministry has made in its role assumptions are directed to repositioning itself as a “governing department that wants to be both participant and partner in societal and administrative processes” (2006: 8). The aforementioned reorganization process of the DG RWS may be perceived as one of the tangible efforts in this change process.

When examining the roles the ministry desires to play, the first questions that come to mind are directed at the manifestation of these roles, their timing, and their connection to the roles of other network partners. The Innovation Letter does not reveal in which situations or when the ministry wants to perform what type of role(s). It seems that the ministry aims at playing these roles simultaneously without considering their mutual dependency. Furthermore, it has become apparent that the role division between the identified actors, private sector firms, knowledge institutes, the ministry of Public Works, Transport and Water Management and other governmental agencies does not explain the nature of the roles of the other key actors. Are these roles expected to be complementary to those of the ministry? And if so, to which of the eight roles that the ministry has envisaged? And, to all of them at the same time? Or perhaps the roles of the other key actors should be opposite to contradictory to or coherent with the ministry's roles? And if so, to which of those desired roles and all at the same time? There are no indications about how the desired roles are played, managed or planned. The timing and sequence of the desired roles remain unclear.

The role division and descriptions are abstract and generalized representations of desired alliances between key actors but, as we have seen, these actors have diverging interests, frames of reference and priorities. The actual materialization of relevant roles remains uncertain. There is no sign of sensitivity to the idea of situatedness of each specific innovation initia-

tive. It is my proposition that in each idiosyncratic situation some kind of role division will emerge or have to be negotiated. The described role division and desired roles of the ministry will then be nothing more than a guideline. With these remarks, I want to address the abstract nature of role divisions and descriptions. The next, and for this thesis, relevant questions are: how do these roles have to be translated into concrete actions and behaviors of professionals who are actually ‘in the business of getting innovation done’ in these well-defined innovation systems?. Will they be able to identify, define and communicate the role(s) they are expected to play?. Will their counterparts from the others key actors recognize, acknowledge and accept these role inclinations?. Will they be able to perform effectively in their defined roles? and, will their counterparts be able to perform effectively in their complementary or contradictory roles?

These types of questions remain unanswered in the Innovation Letter, and were not even raised or identified as potential threats or opportunities to the well-argued reason for moving forward with the innovation system in mobility and water management. It may well be that these noble intentions (cf. Frissen, 2007) will get stuck in the ‘inhuman and surreal’ role descriptions that are handed to the professionals involved with the exhortation to go innovate.

The perceived deficiencies in the innovation system of water management, as indicated by the Innovation Council (see Section 1.5), are, in my view, rooted in ambiguities that characterize and constitute the public domain (cf. Frissen, 2007). It must be noted here that speaking of ‘the innovation system of water management’ may trigger the illusion that there must be one best way of organizing innovation in this public policy domain. This is not likely, especially because of the ambiguous nature of the public policy domain. It is safe to say that there is no one best way of doing something uncertain (i.e. innovation) in an ambiguous, plural, and hybrid environment (i.e. the public policy domain). We might suppose that, when it comes to public policy innovation, these ambiguities are worsened because of the nature of innovation. Innovation itself is pervaded with erratic uncertainties and glaring inconsistencies. This indicates that public policy innovation, that is innovation *of* public policy (for example, policy for water management) suffers even more from ambiguity. The concept of innovation in the public policy domain will be further examined and discussed in Section 4.8.

The aforementioned perceived deficiencies will not make the materialization of the desired paradigm shift in tangible, innovative action any easier. Ideas and initiatives for water management innovation tend to lag behind the shifted objective. Blocking water, as a familiar objective, can be done with old approaches, grounded in technology, risk assessment and legislation. Boasting of safety standards and reducing risks and uncertainty fit this objective.

Accommodating water in locations and spaces from which it is currently excluded is a different story. That requires the capacity to allow water in locations and to spatial functions where it was once blocked. It requires the capacity to reposition water in our daily life. It requires the capacity to deal with different perceptions of risk and uncertainty as well as norms and standards. However, not all key actors acknowledge the need for altering the existing approach to water management. Some indicate that we will be able to deal with the expected climate change challenges with existing concepts and techniques, at least for the next fifty to one hundred years or so⁵⁷, and that we do not need to invest in dissenting approaches. They advocate that we have to advance and optimize the existing water management structures instead. The diverging views on the direction of water management innovation indicate that the process of debating and interpreting the (expected) consequences of climate change is still ongoing.

1.6

TACKLING THE INNOVATION CHALLENGE: THE WINN PROGRAM OF THE DG RWS

The objectives of the WINN program, and, more importantly, of the professionals that work for WINN are aimed at achieving the water managing tasks of the DG RWS. As indicated earlier, the traditional approaches and techniques for achieving these water management tasks are perceived to no longer be viable because of their financial, spatial and ecological impacts on river basins and estuaries. As a consequence of the new challenges, new ‘technologies’ for water management are needed. WINN must see to their development and implementation. ‘Technologies’ is put between quote marks here deliberately because innovation is not only about ‘hard technologies’ such as construction, inlets, canals, etc., but also about ‘softer approaches’ like multiple land use and alternative functions of water that appreciate the altered perspective on water in our society. WINN was launched to help make that change by achieving the ambition of ‘demand-oriented innovation’. This means that the need for innovation must be driven by perceived and experienced societal needs instead of the ‘supply-driven’ invention of new technologies or concepts.

1.6.1

OBJECTIVES OF THE WINN PROGRAM

WINN was initiated to stimulate, organize and implement larger pioneering innovation in water management. Thus WINN has been specifically designed to help make the change

57 This is uncertain because experts dispute the pace and impact of the sea level rise along our coast.

from traditional to new water management policies. WINN’s objectives are described as follows:

based on a solid future perspective WINN is laying the foundations for the organization, policy and management of water and of the Dutch infrastructure under the direction of the Ministry. At the same time, WINN is looking for ways to make a concerted effort to find innovative and durable solutions for the use of water and the water infrastructure in the Netherlands. The program is developing long-term perspectives, specific test projects and demonstrations and is aimed at linking long-term planning to short-term realizations⁵⁸.

To achieve its objectives, WINN started by exploring the societal problems that require innovation because traditional solutions no longer apply. The exploration was carried out for four water-related themes: Rivers, Sea and Shore, Sediments and Water and Housing. From this exploration tangible problems should be identified that demand an innovative solution. The tangible problems thus provide a ‘landing place’ for the development and implementation of innovations. This is a vital stage in the innovation process: only through implementation can innovation prove its practical value for water management tasks. In short, WINN is meant to be organized from a bottom-up perspective.

The implementation of WINN’s innovations was begun by launching pilot projects. Pilot projects are carried out in one or more geographical locations in which innovative approaches and/or technologies are tried out. These projects presuppose the involvement of local actors, such as other water managing parties, water boards, municipalities and provinces, and citizens, farmers and businesses. However, if we look at WINN’s objectives, we see that they tend to be more top-down than bottom-up. WINN appears to be more supply oriented than demand driven. Innovation tends to be conceived and organized by a supply-oriented approach: an internally conceived idea is translated into an innovative technology that has to be ‘sold’ to other water managing actors, such as the DG RWS’ regional agencies and the water boards. But I argue that in today’s public policy network of integrated water resources management, the actual challenge for the WINN professionals is to ‘seduce’ other network actors to work with them in the innovation program, in jointly developing desired and innovative solutions. However, ‘demand-oriented innovation’ was not a clearly operationalized objective in WINN and, therefore, I provisionally conclude here that the program has a bottom-up intention but is stuck with a top-down working style.

58 <http://www.waterinnovatiebron.nl/cgi-bin/toonlijst.pl?config=config&var=volgnr&val=3&layout=index&confignr=3> (retrieved: June 2005).

1.6.2

ORGANIZATIONAL EMBEDDEDNESS OF WINN

The organizational chart (Figure 2) shows the formal organizational structure of the ministry Public Works, Transportation and Water Management, during the research period of this thesis (from June 2004 to December 2006). I have put WINN in this formal chart to indicate the position it had in my perception during the period of this study. I have put arrows in the chart going from WINN to the organizational parts of the DG RWS that WINN has to work with. These arrows need some further explanation.

WINN has strong relations with the DG RWS's specialist agencies, since all its professionals are recruited from these organizations, hence, the thick arrow. Innovation is perceived as a challenge for knowledge workers within the DG RWS. There is an (intentionally) strong relationship with top-level management of the DG RWS, since WINN is considered by them to be an 'instrument' that should prepare the DG RWS for its future tasks in water management. There is a 'weak' relationship with the regional agencies that, ideally, should provide the opportunities for WINN to experiment with innovations in their regional territories for water management. The regional agencies should allow WINN to test innovative concepts and techniques in their regional waterways and water management infrastructures (such as dams, levees, ports and polders). However, the regional agencies are not too keen on allowing these experiments because they often oppose their formal water management tasks, including the day-to-day maintenance of water works. Management and maintenance tasks and innovation essentially have a difficult understanding. There is another weak relationship between WINN and the policy directorate of the ministry, DG Water. DG Water is the policy-making directorate of the ministry of Public Works, Transportation and Water Management. DG Water is responsible for developing the policy framework for water management. In contrast, the DG RWS is responsible for executing water management tasks within this policy framework (see also: Section 4.8). Innovation almost always means challenging the existing policy framework. As we have seen in the previous paragraphs, policy and innovation have a difficult relationship. But WINN is the innovation program of the executive agency of the ministry and not of the policy department DG Water. Hence, in DG Water's perception of the DG RWS should not interfere with strategic, long-term policy issues. WINN should aim at (short-term) innovations for improving the executive tasks and maintenance and not at influencing (long-term) policy concepts.

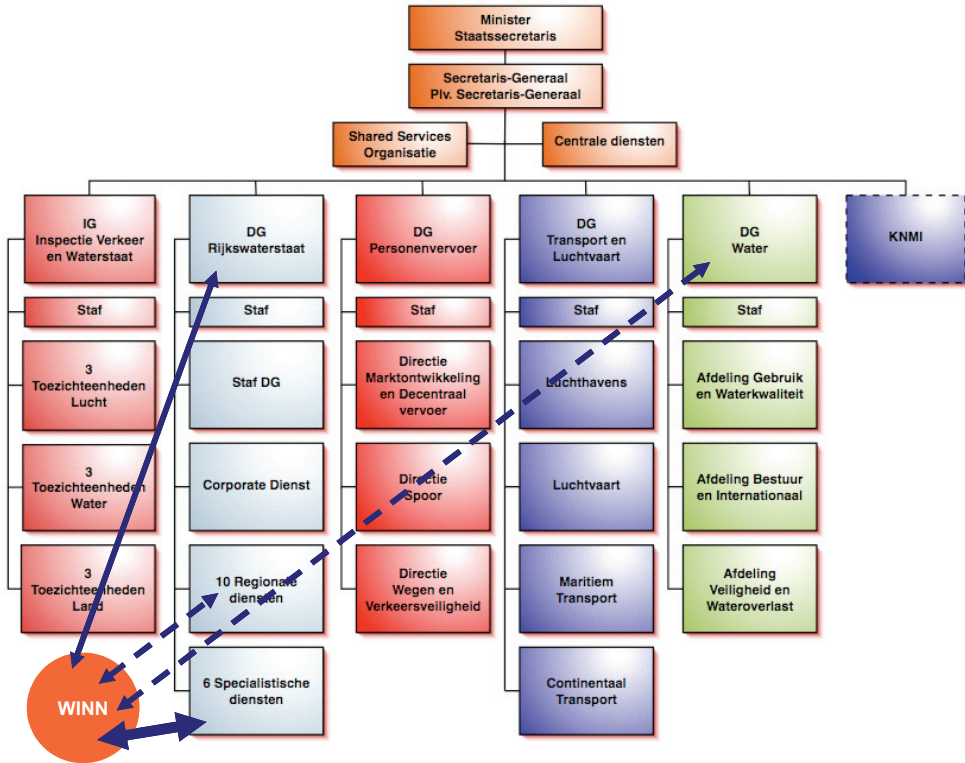


Figure 1 My perception of the organizational embeddedness of WINN in the ministry⁵⁹

1.6.3

ORGANIZATIONAL STRUCTURE AND FUNCTIONAL ROLES IN WINN

Next to the perceived position in the current organizational structure of the DG RWS, WINN has its own organizational structure for achieving its policy objectives. The organizational structure of WINN can be best described by explaining the functional roles in the program. There are nine functional roles put in place to govern, organize and implement the program:

1. Program management is responsible and accountable for securing the internal and external legitimacy of the program by steering its substantive progress.
2. Program support is through assistance of the program manager and a link between program management and theme leaders. Program support includes WINN's controller who is responsible for the formal administration and accountability of the activities in the program. Program support includes the so-called 'synergizer'⁶⁰ who is responsible

⁵⁹ Source: website minvenw.nl; retrieved May 2006.

⁶⁰ The actual name of this role in Dutch slang is synergator. I have translated this in synergizer for a more American-English sound.

for identifying and organizing synergies between innovations in WINN and innovations by other actors and programs, e.g. at knowledge institutes or private sector firms. These synergies must be beneficial to WINN's program management as well as to theme leaders and pilot managers.

3. Theme leaders at WINN are senior professionals who work most of their time at the DG RWS' specialist agencies⁶¹. They participate part-time in WINN as responsible and accountable professionals for progress of the themes. There are four substantive themes: river basins, sediments, sea and shore, and water and housing. The leaders are responsible for generating and developing new innovative concepts. In addition, they take care of the internal and external legitimacy of the specific innovation theme.
4. The theme leader Forum Ervarum is responsible for the knowledge translation and transfer in WINN and back and forth between WINN and the 'standard' organizational parts of the DG RWS. This professional is responsible for organizing the learning process for WINN and acts as the contact person on behalf of the client organization for the intended learning course. In addition, the acquisition and transfer of new (external) knowledge and experiences for the benefit of WINN innovations and other organizational parts of the DG RWS is also part of the tasks.
5. The theme leader Platform is responsible for developing and sustaining internal and external relationships and contacts on behalf of and for the benefit of the program. In doing so he is active in organizing a knowledge network around WINN through which knowledge can be exchanged and disseminated to internal (e.g. the DG RWS) and external (e.g. knowledge institutes and private sector firms) partners of WINN. This knowledge network must be beneficial to both program management, the theme leaders and pilot managers.
6. The Core Team⁶² of WINN is composed of the program manager and all theme leaders, including theme leaders of Forum Ervarum and Platform. Together they monitor and steer the substantive progress and focus of the program as well as decide on what new initiatives to take on and which new pilot projects to launch.
7. Pilot-project managers are responsible and accountable for managing innovative projects in which new concepts and technologies are tried out. Project managers dedicate most of their time to their designated project. Managers report their substantive progress to the designated theme leader; the financial and administrative progress is reported to WINN's controller.
8. Program Board is the internal anchorage of the innovation program, monitoring its progress and results for the various organizational parts of the DG RWS. The WINN Board

61 All specialist agencies of the DG RWS are involved in WINN.

62 Kernteam vertaald met core team.

is composed of three professionals⁶³: the executive manager of one of the specialist agencies, the executive manager of one of the regional agencies, and WINN’s program manager.

9. Top-level management⁶⁴ of the DG RWS considers WINN to be an instrument for developing new concepts and technologies which must enable RWS to meet the new challenges in water management. The DG RWS’s top-level management is considered to be WINN’s progenitor.

At the time of this study, WINN professionals active in the program’s, functional roles 1 through 7 were geographically dispersed to several offices in the country (The Hague, Utrecht, Lelystad and Arnhem). Theme leaders and pilot project managers worked mostly as ‘part-time’ innovators, in addition to their formal assignments as policy professionals at one of the agencies of the DG RWS. Theme leaders typically devoted around twenty percent of their time to WINN, the rest of their time they worked in their ‘formal organizations’, with standard routines, interests, relations and power distribution. Pilot-project managers were active fifty percent of their time at WINN. The core team mostly convened once every six weeks to make decisions and discuss the progress of the innovation activities. Most professionals involved could be perceived as experts on ‘technological substance’, and not so much on organizational and/or procedural⁶⁵ issues.

The role division within WINN among the functional roles described above was not clear and seemed to remain volatile (see Section 7.5.3) throughout the period of research (2004-2006). One of the main reasons for this ‘volatility’ was that within each functional role, different tasks had to be carried out at the same time, such as researching, networking, creating, organizing, taking initiative and responsibility, and monitoring. However, these tasks were not exclusively restricted to one functional role but applied to most of them. As a consequence, the perception of the described role among the WINN professionals differed. They had different views about each other’s functional roles and the subsequent tasks. It appears that professionals who had the same functional role thought differently about how their task should be carried out. It also appears that role perceptions were subject to change, depending on the stage of development of a specific theme or pilot (this is further elaborated on in Section 7.5.3). For example, the initial stage concerns the generation and analysis of substantial information sources where roles like researching and creating are important, whereas the implementation phase is more about process (externally directed) and procedures (internally directed), with roles like taking initiative and responsibility, and monitoring.

63 During the research period of this study, the WINN program board was composed of the executive manager (HID) of RIKZ, the executive manager (HID) of the regional agency, directorate east (RWS-Directie Oost-Nederland) and WINN’s program manager.

64 In this thesis, top-level management of the DG RWS is constituted by the Director-General and the deputy Director-General.

65 Met procedural wordt hier bedoeld procesmatig. Het Nederlandse begrip procesmatig, bijvoorbeeld in procesmatig handelen, blijkt lastig in het Engels te vertalen te zijn.

1.6.4

PRACTICES IN THE WINN PROGRAM

The functional roles in WINN are an indication of the practice that the professionals involved are developing. As indicated in the introduction to this study (Section 1.1), the learning course is intended to provide reflection on the developing practices at WINN. However, not all professionals who perform the functional roles described above will participate in the learning course. Only program management, program support, theme leaders, and pilot-project managers will be present in the intended learning course and it's their practices that will be reflected upon. Thus, it is the description of these practices that concerns us here. The description is based on the first round of in-depth interviews I conducted prior to the learning course (*ex ante* evaluation, Fall 2004). The practice of the professionals in the WINN program can be roughly described as 'conceiving and organizing innovation in water management'. This practice has the following formal sequential structure.

The program's mission and objectives are the starting point for the water-related themes for which innovation should be initiated. These themes should start with an exploration and interpretation of (perceived) societal problems in water management that have induced the policy paradigm shift. The policy paradigm shift must be operationalized by innovation in such a way that it contributes to the solution for the explored societal problems. Innovation is captured through novel concepts and/or technologies that should represent the new policy paradigm. Then, the innovative concepts and/or technologies should be elaborated upon and tested through pilot projects. Lastly, successful pilot projects should then be disseminated to and implemented through new policy objectives, measures and instruments for water management, thus constituting a new policy regime. The roles of program management, program support, theme leaders, and pilot project managers together constitute the 'formal, idealistic innovation practice' at WINN. If we examine the practice of each separate role that will be present in the learning course in more detail, we get the following picture.

The practice of the program manager has a hybrid nature, involving activities such as networking, taking responsibility, monitoring and coaching. The main task is to promote WINN's objectives to relevant actors, inside and outside of the DG RWS. This task is directed at connecting WINN to the ambitions, objectives, and initiatives of many different actors who may (or should) benefit from the activities in the innovation program. This task is perhaps best represented by the adage of doing the right things for the relevant 'water challenges'. The adage refers to the locus of WINN's efforts. The added value and appreciation are found outside WINN, and this requires frequent and extensive talks with representatives of many different actors, such as the staff of the RWS DG, DG Water, specialist agencies of the DG RWS, regional agencies of the DG RWS, private sector firms, knowledge institutes, and Directorates-General of other ministries. The desired connection of WINN to the aforementioned actors is established through conducting meetings, exchanging knowledge about

innovation opportunities and policy priorities, and reaching agreements on collaborative innovation initiatives and projects. Next, the program manager is responsible and accountable for WINN’s substantive progress and programming, which include the production of reports on achieved results, the annual program plan for new initiatives and projects, and the annual financial declarations.

The substantive progress of the innovation program can only be reached by those who are actually, or should we say “practically” responsible for this task, meaning the theme leaders and pilot-project managers. Thus, the program manager is largely involved in the practice of ‘governing’ and coaching these WINN professionals.

The practice of program support is closely tied to the actual activities of WINN’s program management. This practice has an administrative nature and comprises the making of appointments for meetings with representatives of the aforementioned actors, preparing and distributing reports, minutes and financial overviews. For this program, support has to ‘collect’ relevant information from theme leaders and pilot-project managers about the substantive progress and financial results of their innovation activities. WINN’s controller is responsible for this.

The theme leaders are responsible and accountable for the substantial progress of their specific water management theme. Their practice consists of writing and updating a long-term perspective on the expected developments and challenges of this theme, as well as an annual work plan for the intended innovation activities and projects for the upcoming year. They provide financial information about the implemented activities and provide this to program management and the program’s controller. For progress on their theme, they acquire and process (scientific) knowledge about and future challenges in water management and on the latest (technological) insights that could provide solutions for them. Based on this knowledge, they conceive ideas for new innovation projects and other initiatives. They ‘govern’ and coach the professionals who organize and manage pilots projects that ‘reside’ under their innovation theme. Lastly, they disseminate their conception of relevant developments and challenges in their water management theme, including the underlying knowledge, to pilot-project managers and to the water management sector as a whole. For this dissemination, they organize ‘thematic’ events, such as work conferences, seminars and other manifestations, and produce ‘thematic’ publications (reports, leaflets, maps, websites, etc.) about the outcomes of the thematic activities.

The practice of the pilot-project managers is organizational in nature. There are two main types of pilot projects at WINN. The first concerns the organization of applied research projects aimed at generating applied knowledge for conceiving innovative concepts and/or technologies. The second type is the actual application and testing of these new innovative

concepts and/or technologies in real life situations, in most cases based on the outcomes of applied research⁶⁶. The pilot-project managers are expected to do everything that lies within their competences to organize these pilot projects. They write and update a feasible project plan and execute this through acquiring the necessary resources. Because WINN does not have all relevant resources, such as a location (think of a dike, polder, coastal zone or river basin), fundamental knowledge and practical know-how, and administrative and legislative instruments, the execution of the innovation pilots is, or should be, done in cooperation with other actors, such as water boards, regional agencies of the DG RWS, provinces and municipalities, private sector firms and knowledge institutes. The pilot-project managers should arrange and 'govern' this cooperation, e.g. through regular project meetings with representatives of the aforementioned actors. Lastly, they disseminate the progress and (provisional) results of their innovation pilot projects. They do this in cooperation with their theme leader and the actors involved through innovation events, 'celebrating' the project's milestones, and through publications and conferences.

When we return to the rough definition of practice in WINN, conceiving of and organizing innovation in water management, we see that the two verbs in this definition suggest two different activities. The first activity, 'conceiving innovation', refers to imagining new concepts and technologies for potential innovation projects or initiatives that are relevant to achieving the objectives of the WINN program. For conceiving or imagining new concepts, the professionals (mostly the theme leaders) search for novel ideas from science and technology and new insights on societal developments, acquire knowledge and inspiration from other policy domains, and/or 'sit at a desk and think really hard themselves'. They assess the meaning and relevance of the findings for future water management and (attempt to) translate this assessment into concrete activities for WINN.

The second activity, 'organizing innovation', involves the concrete execution of (earlier) conceived innovative concepts⁶⁷. As indicated in the practice of both theme leaders and pilot-project managers, the organization of innovation materializes in two types of pilot projects: applied research projects and the application and testing of new concepts in real life situations. Both types of pilot projects require specific resources, including support from relevant actors, that have to be acquired through cooperation with other actors. These resources then have to be allocated and managed to reach the intended outcomes of the pilot project.

66 Of course, intermediate forms of these main types of pilot projects are recognizable. In some cases, the distinguished types of projects were subsequently executed: first, applied knowledge for a potential innovation pilot project is generated, which is then executed as a tangible new concept for water management.

67 Mind you: the record shows that these innovative concepts were conceived inside as well as outside of the WINN program. The latter were 'offered' to WINN by other actors involved in water management innovation, such as private sector firms and knowledge institutes.

The first activity concerns the search for and attribution of plausible meanings for new knowledge and insights, in the light of the (future) challenges in water management. The second activity comprises the actual manifestation of the conceived meanings, in the light of the (future) challenges in water management. Simply said, the first practice refers to the ‘what might...-question’; the second to the ‘how can...-question’. These activities refer to the hybrid nature of practice in WINN, also indicated in Section 1.6.3. This means that these activities cannot (convincingly) be attributed to each of the functional roles in WINN. Most professionals are engaged in both activities to get their job done. The hybrid nature of this type of policy practice is accurately captured by Laws who speaks of “the divided profession” (2007: 54-59) to characterize the ‘professional splits’ when working simultaneously in policy, research and practice. This is further elaborated on in Section 5.5.2.

1.6.5

ASSESSING THE NEED FOR LEARNING IN WINN

Based on previous innovation programs of the DG RWS, some of the WINN professionals had concluded, in a rough self-assessment⁶⁸, that innovation itself resulted in ‘learnings’ but that these ‘learnings’ were not consciously stored, shared and transferred to the actual policy practices of the DG RWS. According to the text of the self-assessment document, there are considerable organizational and cultural hindrances to productive knowledge translation and transfer within the DG RWS. In the past, innovation programs resulted in tangible new ‘knowledge artefacts’ but these largely failed to impact policy and maintenance practices at the DG RWS. In the self-assessment report, it is argued that the organizational culture of the DG RWS is one of the key factors of the failing implementation of the ‘learnings’ in innovation programs. The self-assessment report describes the organizational culture as a continuous readiness for taking on new tasks and challenges instead of reflecting and contemplating on generated knowledge and experiences from previously accomplished tasks and challenges. It is indicated that the culture of the DG RWS is one of ‘doing’ instead of ‘thinking’. The DG RWS is inhabited by action-oriented professionals whose main focus is getting things done in water management, road construction and other public works projects. The consequence of this action-oriented culture to the challenge of innovation is often perceived as starting a new, preferably technology-driven project. Thinking things through, reflecting on previous experiences before starting something new, is perceived to be difficult. This difficulty is based on the appreciation of acting and doing over thinking and reflecting. The self-assessment memo mentions other difficulties with a more reflective approach to innovation which I describe as follows:

68 An internal memo: What do we want with the learning course? WaterINNovatiebron, June 2004.

- Acceptance and support for innovation in an organization that appreciates its professionals most for making and implementing policies and executing maintenance tasks.
- An internal orientation instead of an external focus.
- More attention for the tangibility of costs than for the avoidance of tacit benefits.
- A preoccupation with risk management over maximizing revenues. There is more focus on control than on dealing with uncertainty. As a consequence, continuity is more appreciated than the capacity for seizing opportunities.
- A not-invented-here attitude: knowledge that is not entirely generated from within the own organization, has less chance of being applied.
- A focus on 'hard technology' and cognitive measurable knowledge.

It is perhaps no surprise that these difficulties show a strong resemblance to the deficiencies in the innovation system of the domain of water management, described in Section 1.5.

Consequently, it is perceived that the innovation programs of the DG RWS have no favorable record with regard to the implementation of their 'learnings', that is, with new knowledge and experiences. Many efforts show a failing knowledge translation from innovation programs to 'formal policy routines'. According to the self-assessment document, new knowledge and experiences were developed, yet somehow they were only scarcely transferred, translated and dispersed from innovation programs to everyday routines and practices. The barriers and obstructions in knowledge translation follow from the characteristics of the organization and seemed to be present on both the work floor and on management levels. Too often, innovations by the DG RWS had been conceived in a supply-oriented fashion, following its 'engineering culture' (cf. Van der Woud, 2006). Water experts within the DG RWS tended to come up with new solutions and tried 'to sell them to society'. This often resulted in an extensive mismatch between supplied and demanded solutions, and, not to mention, in discrepancies of a more procedural nature, such as distrust, conflicts or mere confusion about intentions in solving water-related problems. Actors in water management, like water boards, municipalities, provinces, and local stakeholders, such as farmers, were often overwhelmed by yet another new (technological) solution from the DG RWS⁶⁹. One of the consequences was that, with high costs and small tangible impacts, the effectiveness and efficiency of innovation programs were questionable. This undermined the legitimacy of these programs, both internally and externally.

To tackle complex problems in water management – captured by the desired shift in the policy paradigm, see Sections 1.2.2 and 1.5 – dealing with contrasting, even opposing, frames of reference was inevitable. For professionals at the DG RWS, it appeared to be difficult to deal with actors with various, sometimes opposite frames of reference within one single project or program. Perceptions of problems and projects often diverged so intensely that productive

69 No wonder why this government agency is often referred to as 'the state within the state'.

communication was hampered. That made it hard to share experiences and lessons learned among water management professionals and fellow innovators at the DG RWS. Apparently, the professionals at the DG RWS were not sufficiently skilled to convey and connect diverging views and interests with regard to public policy innovation in water management.

1.7

THE RATIONALE FOR THIS DISSERTATION: THE PRACTICE PERSPECTIVE

The elaborate introduction of this chapter paints a picture of the challenges for the professionals working in the WINN program. If we would place ourselves in their shoes, by presuming that we are one of these professionals in WINN and are asked to conceive of and organize water management innovation in the context of the DG RWS, then what would we do? Where would we begin? What would our substantive focus be and who would we involve in our efforts and why? How would we conceive of new, innovative concepts or technologies and how would we try to organize our innovation project?

These types of questions play a central role in this thesis. One of the potential answers to these questions is that we would have to develop some kind of practice for conceiving of organizing innovation in water management. The practice perspective is further elaborated on in Chapter 5. In Chapter 2 the practice perspective is incorporated in the methodology of this study.

The foregoing introduction of Dutch water management, its innovation ambiguities, the objectives and practices in the WINN program are derived from documents of the DG RWS, the Innovation Council and the WINN program, and on repeated in-depth interviews with WINN professionals. Based on these sources, and on my long-standing and close interaction with the WINN-professionals, I would, in retrospect, characterize the desired practice for conceiving of and organizing public policy innovation for water management as follows:

The practice of innovation is represented by the ability to acquire new knowledge or achieve alternate combinations of existing knowledge; translate this into adequate and efficient solutions that are in line with the water managing tasks of the DG RWS; accommodate the changed policy paradigm, induced by the perceived impacts of climate change and societal developments, in close cooperation with and beneficiary for knowledge institutes and private sector firms, and transfer these new solutions successfully to actors who actually ‘perform’ water management, such regional agencies, water boards, and provinces, without ‘upsetting’ the administrative-political levels in water management, such as the Minister or State-Secretary, or colleagues at policy departments, such as DG Water and DG Spatial Policy.

My characterization of the desired practice in WINN immediately points to the tension between innovation and policy making, a tension with which the professionals involved in WINN will have to deal. This tension will be further addressed in Section 4.8.

With this characterization of the actual challenge of developing a practice for conceiving of and organizing innovation in water management by the professionals who participate in the WINN program, I have put the practice and practitioner's perspective as the focus of attention. Of course, this perspective also reconnects to my personal interest in the changes in actual practice of public policy professionals who are involved in complex, participatory policy processes (see Section 1.1). The group of WINN professionals can be described as a specific community of practitioners who 'practice' public policy innovation for water management. A community of practitioners is an analytical concept (cf. Brown & Duguid, 1991) for assessing and understanding the way people learn and transfer knowledge when working with others, thus forming a community around an evolving work practice. In the case of the WINN program the work practice is the conception and organization of innovation in water management.

The practice and practitioner's perspective has placed this study in the pragmatist tradition (cf. James, 1907/2005). The pragmatic nature of practice is indicated by Lave who describes practice as "an attempt to deal with the problem of context" (1988: 5). Human action is situated in the material and social world, inducing us to pay specific attention to the conceptualization of the relationship between the individuals 'acting' and the surrounding environment. In trying to solve problems that come up within the course of their everyday work, individuals improvise with the material, social, and experiential resources at hand. Practices are experience-based, iterative courses of action. This experiential orientation refers to the pragmatic nature of practice. Next to pragmatism, practice refers to relativism. Practices are defined by the individuals who perform them, relate to the communities in which they are developed (e.g. communities of practitioners), and refer to the (organizational) context in which they have meaning. Practices start with a certain objective and from a certain perspective, but evolve along the way. Practices cannot be comprehensively designed beforehand, but are 'iteratively invented and adapted'. In addition, practices are provisional, ironic (cf. Rorty, 1989), and sometimes even accidental attempts to deal with continuously changing contextual characteristics, though still emphasizing their relative nature. This line of thought is the foundation for the theoretical perspective of my study, that is what I call a relativist/pragmatist inquiry.

In the following chapters I will argue that the desired practice has to be developed and executed in a specific context, that of the network society (Castells, 1996) and its subsequent policy networks (Teisman, 1992; Börzel, 1997). This will be further analyzed in Chapter 3.

The desired practice has a specific content, that of conceiving and organizing public policy innovation for water management. This practice can be perceived as a specific form of policy analysis (cf. Wagenaar & Cook, 2003) that has undergone significant changes due to the networkification of society (cf. Frissen, 1999), the ‘hybridization’ of the public policy domain (cf. Brandsen, et al., 2004), and the ‘erosion of the existing knowledge landscape’ (cf. Chesbrough, 2006). These changes are recognizable in an ongoing fragmentation and distribution of the objectives of and resources for public policy innovation processes. The concept of innovation itself adds specific intricacies to the required practice which will be further examined in Chapter 4.

Both concepts, public policy networks and public policy analysis, frame and color the practice of conceiving of and organizing innovation in the public policy domain of water management. The relativist/pragmatist inquiry will be used to examine these concepts.

1.8

A FIRST LOOK AT THE CENTRAL RESEARCH QUESTION OF THIS STUDY

To deal with the hindrances for innovation that follow from the organizational culture of the DG RWS and the perceived deficiencies of the innovation system in water management, the initiators of WINN decided to put learning at the heart of the program. They named this learning objective “Forum Ervarum⁷⁰”. Experience-based learning is the key principle of this learning. Another principle of Forum Ervarum is that learning should be ‘real time and on the job’, which means that the lessons learned in Forum Ervarum must be ready for implementation in the daily practice of the innovation professionals involved in the program, and, if possible, in the daily practices and processes of knowledge transfer for water management at the DG RWS. The text of the self-assessment memo (2004: 3) is clear on this:

We need reflection on our experiences. And because the group [of professionals] must be able to learn [from this reflection] immediately, we need [this] feedback. For this we need one or more external parties who can take on this auditing role. Theme leaders and program management have indicated that this [reflection] cannot be done at the cost of the primary process and, therefore, cannot take too much time. [The learning course] must become a best-practice method for the transfer of generated knowledge and experiences within the WINN program. Sharing knowledge is the central objective and an open mind is essential to do so.

70 The name of the learning course points accurately to its purpose: the joint and open exchange, discussion and reflection on experiences that is gained in the practices of the innovation program. In this respect, ‘Forum’ is a metaphor for ‘joint and open’; and ‘Ervarum’ metaphorically refers to the Dutch word ‘ervaring’, that means experience. Experience is the focus of attention of the learning function.

This quote indicates that reflection on the evolving practice of innovation and knowledge transfer – provided by the intended learning – should be considered as an integrated and continuous activity in the WINN program. In other words, the learning course and the reflection it provides, is embedded in the innovation program (cf. Granovetter, 1985; Bredo, 1994) Therefore, I will speak of ‘embedded reflection’ to indicate the inseparable relationship between the learning course and the developing innovation program.

In my study, the basic assumption – Argyris et al. (1985) call this the theory of action – is that learning is an appropriate approach for providing reflection on the (evolving) practice of innovation and the transfer of knowledge. This basic assumption is translated in an objective for the intended learning course in WINN which reads as follows: “How can learning in the WINN program be operationalized and implemented, both in substance and in format⁷¹, in such a way that it:

- enhances the internalization of experiences on the individual and collective levels,
- improves the transfer and application of generated knowledge and experiences, and
- increases the documentation and disclosure of external knowledge and experiences for future innovation programs at the DG RWS?”.

The objectives of the learning course frame the research objective of this study. For the purpose of this study, the multiple objectives of the learning course are interpreted as follows. Enhancement of the internalization of experiences refers to the need for reflection on the innovation practice by the group of professionals involved in WINN. Internalization of experiences presupposes that reflection will influence the existing practice of the community of practitioners. The desired improvement of the transfer and application of generated knowledge and of the documentation and disclosure of this knowledge stipulates the need for reflection on the processes of knowledge transfer in the innovation program. In addition, the objective of the learning course speaks of the operationalization and implementation of learning which indicates that active intervention in the WINN program, through the learning course, is anticipated.

It is important to bear in mind that the objectives of the learning course and the research objective of this study are not the same. The learning course, designed and organized along the aforementioned objectives, provides the empirical data that is needed to reflect on the impacts of reflection on the practice of innovation and knowledge transfer in the WINN program.

With the intended learning course, active intervention in the community of WINN practitioners is aimed for. Active intervention calls for a specific type of research that can be

71 In Dutch: zowel in vorm als inhoud.

characterized as action science (Argyris et al., 1985). This active intervention should lead to a (more) reflective practice (Schön, 1983) within WINN when it comes the practice of conceiving of and organizing water management innovation and knowledge transfer. Both concepts will be discussed and interpreted for the intended learning course in Chapter 2.

For now it is important to bear in mind that the participating professionals will have a decisive say in the substance (what I call ‘topics for reflection’, see Section 7.2.2) and format (what I call ‘working methods’, see Section 7.2.5) of the intended learning course. This stance is further addressed in Chapter 2 and in Chapter 7 which describes its actual design and implementation. In Chapter 8 the impacts of the reflection provided by the learning course are interpreted and reflected on.

The intended learning course has two objects of reflection: reflection on the innovation practice and reflection on knowledge transfer. The first object of reflection aims at supporting the group of professionals that ‘inhabit’ the innovation program, developing and, if possible, improving their practice in conceiving of and organizing public policy innovation for water management. Reflection is directed at the development and, if possible, the implementation of skills and competences that are required for this specific practice. The second object of reflection must support knowledge transfer, including documentation and dissemination of external knowledge about innovation processes to other colleagues at the DG RWS. In this respect, it is desirable that the WINN program serve as a (serving-) hatch⁷² for other departments of the DG RWS with regard to acquiring and passing on new knowledge about innovative concepts and technologies for water management.

It is expected, both by the WINN professionals and me, that reflection on their evolving innovation practices and processes of knowledge transfer will generate new knowledge that is worthwhile ‘to inform practice’ (cf. Argyris et al., 1985), within and outside of the WINN program⁷³.

This expectation implies that the central research question of this study is twofold. First, I will identify and describe the impacts of the reflection provided by the learning course in the WINN program and, second, I will reflect on and interpret the described impacts on the innovation practice of the professionals and their knowledge transfer in the program. My reflection will be guided by two relativist/pragmatist concepts. The impacts of reflection on the practice of innovation at WINN will be interpreted through the concept of learning-in-

72 An opening in the wall between a kitchen and a dining area (Collins English Dictionary, 5th edition, 2000). This metaphor refers to the relationship between the WINN program on one side and the specialist and regional agencies of the DG RWS on the other. WINN is supposed to prepare innovation like a meal that is ready to be consumed by other organizational parts of the DG RWS. Coincidentally hatch also refers to a sluice or sliding gate in a dam, dyke, or weir – a convenient reference to the domain of water management.

73 Of course, this may open the risk for the so-called Droste-effect with regard to knowledge transfer in and through the learning course, resulting in multiple-loop reflections.

practice (Lave & Wenger, 1991; Brown & Duguid, 1991); the concept of boundary spanning (Carlile, 2002; Bechky, 2003) will be used to interpret the impacts of reflection on the processes of knowledge transfer at WINN.

1.9

OUTLINE OF THIS THESIS

This thesis has the following structure.

Chapter 2 describes the methodological approach to this thesis and introduces the theoretical perspective that frames this study, the relativist/pragmatist inquiry. The methodological approach is framed by the concepts of case study research (Yin, 2003), action science (Argyris et al., 1985) and reflective practice (Schön, 1983).

Chapter 3 addresses the societal and institutional contexts in which processes of policy analysis and innovation must be organized and implemented; that is, the network society and the networked nature of the public policy environment.

Chapter 4 examines the manifestation of participatory processes of public policy analysis and the introduction and elaboration of the concept of public policy innovation.

Chapter 5 discusses the concepts with which participatory processes of public policy analysis and innovation are understood and made tangible; that is, the concepts of practice and the practitioner's perspective.

Chapter 6 addresses the pragmatic concepts with which practices of public policy innovation and processes of knowledge transfer can be interpreted, meaning the concepts of learning-in-practice and boundary spanning.

Chapter 7 describes the case study in which reflection on the practice for conceiving of and organizing innovation in water management and knowledge transfer is facilitated through a learning course for the professionals involved in the WINN program.

Chapter 8 reflects on the impacts of the reflection provided in the learning course on the practice of innovation and knowledge transfer.

Chapter 9 focuses on assessing the methodological and contextual aspects of this study, since these are, in my retrospective view, the most prominent features of this study.

Chapter 2

A Methodology for the ‘Embedded Researcher’

2.1

INTRODUCTION

As indicated in Section 1.7, the expressed need for reflection in the WINN program led the professionals involved to decide to put learning at the heart of this innovation program. Learning appears to be an attractive concept for them to support their activities in WINN and to try to avoid the deficiencies of previous innovation practices at the DG RWS. The WINN professionals assigned me to organize this learning. In doing so, I acted as an ‘embedded researcher’ because I was present in WINN over a long period of time. I designed and organized the desired reflection and evaluated its impact(s) as a basis for renewed reflection. WINN’s program management allowed me to use this assignment for designing, organizing and evaluating WINN’s learning endeavor as case study for this thesis.

The objective of the intended learning was to reflect on and, if perceived necessary, change the innovation practice of the group of professionals involved in the innovation program. Learning should stimulate knowledge transfer about innovation (projects) among the professionals involved, and from them to other organizational members within the DG RWS. Before developing the case study, a theoretical demarcation was completed by describing three relevant and coinciding concepts: policy networks, public policy innovation and the practice of policy analysis. The choice for these concepts rests on the following argumentation. As seen in Section 1.2.1, integrated water resources management develops in a comprehensive network of policy actors. Innovation in the public policy domain of water management may be perceived as a specific practice of policy analysis. The concept of public policy networks colors the context for the practice of the professionals involved, for conceiving of and organizing water management innovation. The key objective is the effort of reflecting on the evolving practice and processes of knowledge transfer as a basis for potential change and, if possible, the advancement of them. The next question is how these considerations can converge in a case study for a thesis. This question will be answered in the next sections.

2.2

INTERPRETING THE RESEARCH CHALLENGE

Based on the introduction in Chapter 1 about the characteristics of the policy domain of water management and the objectives of the WINN program, I argue that innovation is a specific type of policy analytical practice conducted in a public policy network. This argument is based on the following line of reasoning:

- Integrated water resources management is organized and implemented in a public policy network of public and private actors;
- Policy-making for integrated water resources management is largely the responsibility of public actors, i.e. government agencies such as the DG RWS, water boards, provinces and municipalities;
- Water management innovation aims at conceiving of and organizing new concepts and technologies that should enable water management actors to meet future challenges in integrated water resources management.

In this study, the human perspective on water management innovation is the focus. This perspective is represented in the practice of policy analysis and knowledge transfer of a group of WINN professionals. I argue here that this group can be considered a community of practitioners, namely practitioners of water management innovation. This argument is supported by a recent definition by Wenger (2008)¹:

Communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly.

Now, a community of practice may not be exactly the same as a community of practitioners. Perhaps the first concept focuses more on the practice, i.e. the act, whereas the latter may put more emphasis on the group of individuals performing this act. The subtle difference between the two concepts has also been addressed by Elkjaer (1999). But for the purpose of this study, Wenger's definition is appropriate for identifying a community of practitioners because it tends to focus on the group of people and not so much on the practice itself. The assumption that the group of WINN professionals is a community of practitioners provides valid argumentation for using ideas about situated learning and knowledge transfer in organizational communities as a frame of reference. The situated nature of learning-in-practice is convincingly connected to pragmatic performance² by Brown and Duguid (1991). They call attention to the workmanship of any type of practice by referring to Lévi-Strauss's

1 Retrieved from his website on February 26, 2008. <http://www.ewenger.com>

2 In Dutch: pragmatisch handelen.

(1966) of “bricolage”. The situated nature of knowledge transfer is discussed by for example Carlile (2002) and Leifer and Delbecq (1978) who refer to the decisive role people play in transferring knowledge from one organizational entity to the next. They specifically focus on the relationship between performing tasks at the periphery of an organization and the capacity of knowledge transfer beyond formal organizational boundaries. In performing boundary work knowledge transfer is a matter of bricolage as well. The community of practitioners that perform in an innovation program can be perceived as boundary workers because of their active involvement in transferring new knowledge to other organizational entities.

Communities of practice and/or communities of practitioners are often connected to pragmatist approaches to learning and knowledge transfer (see e.g. Elkjaer, 1999). My acknowledgment of this connection places this thesis in the philosophical traditions that are commonly associated with communities of practice, relativism and pragmatism. Therefore, the theoretical framework for this thesis is provided by relativism/pragmatism. Each of the theoretical concepts (public policy networks, public policy analysis and innovation, and learning) will be examined by what I have called a relativist/pragmatist inquiry.

The situated and practice-oriented framing of this study means that the reflection on the impacts of reflection provided by the intended learning will be examined accordingly by two pragmatic concepts, learning-in-practice and boundary spanning. The concepts are subsequently discussed from a theoretical perspective in Sections 6.8 and 6.9. The reflection on the impacts of reflection on the practice of innovation will be examined through the concept of learning-in-practice (see Section 8.2). The reflection on the impacts of reflection on knowledge transfer is discussed through the concept of boundary spanning (see Section 8.4).

2.2.1

DELIBERATE CHOICE FOR RELATIVISM/PRAGMATISM

The deliberate choice for a relativist/pragmatist perspective for the objectives and theoretical framework of this study is rooted in the emphasis on practice and the practitioner’s perspective. Lave (1988: 5) describes practice as “an attempt to deal with the problem of context”. Human action is situated in the material and social world which encourages us to pay specific attention to the conceptualization of the relationship between the individuals doing the acting and the surrounding environment. Lave argues that actors and their environment stand in a purposeful, dialectical relationship with each other. In trying to solve problems that come up in the course of their everyday work, they improvise with the material, social, and experiential resources at hand. This, of course, refers to the pragmatic nature of practice, indicated by William James’s pragmatic method. James (1907/2005: 52) advocates that

the pragmatic method in such cases is to try to interpret each notion by tracing its respective practical consequences. What difference would it practically make to anyone if *this* notion rather than *that* notion were true? If no practical difference whatever can be traced, then the alternatives mean practically the same thing, and all dispute is idle. Whenever a dispute is serious, we ought to be able to show some practical difference that must follow from one side or the other's being right.

Of course, the purposeful and dialectical nature of practice, as a connection between the individual and his/her social context, could be understood through other theoretical concepts as well, for example symbolic interactionism. According to Boog et al. (2005) Dewey's conception of pragmatism and Mead's ideas on symbolic interactionism are branches of the same tree. Both theoretical concepts take the interaction and transaction between human individuals and their social-cultural contexts as the central object of study. Boog et al. (2005: 155) argue that "these philosophical and social-scientific schools are complementary and can be combined under the name of pragmatic-constructivism".

I argue that with pragmatism comes relativism (although some might say it is the same). Relativism is perhaps best captured through the idea of fallibilism. In my opinion, the acknowledgment that we could be wrong leads to methodological relativism. Fallibilism implies the acknowledgment of the possibility of being wrong, and the willingness to learn from this by reviewing one's assumptions. Hoppe (1998: 25) states that the Cartesian idea of an 'or-or' situation in which knowledge is vested in solid principles of certainty and rationality or becomes subject to "relativist swamp of intellectual and moral chaos" is being abandoned more and more. Thus, rationality becomes an approach to the extent that we realize that "although we must begin any inquiry with prejudgments and can never call everything into question at once, nevertheless there is no belief or thesis – no matter how fundamental – that is not open to further interpretation and criticism" (Bernstein, 1991: 327). The conclusion can be drawn that Bernstein advocates to deal with social-scientific, policy-oriented research in an ironic way (cf. Rorty, 1989). Irony is an important concept for this study because it captures the temporal and provisional nature of the relationship between the methodological approach and the research objective. Rorty (1989: 73) defines the idea of irony as follows:

She [irony] has radical and continuing doubts about the final vocabulary she currently uses, because she has been impressed by other vocabularies, vocabularies taken as final by people or books she has encountered,
She realizes that argument phrased in her present vocabulary can neither underwrite nor dissolve these doubts, and
Insofar as she philosophizes about her situation, she does not think that her vocabulary is closer to reality than others, that it is in touch with a power not herself.

Accepting irony as a foundation for research means that it has a temporal relationship with its objective and its object of study. Findings and conclusions are provisional and never final nor definite. There is no 'central' position from which researchers can describe what is going on in or with an object of study because it is prone to change and changing interpretation. The last remark refers to the concept of reflexivity. Reflexivity points to the influence research has on its objective and object of study. Research will change it, if only through its impact on the researcher's provisional assumptions and expectations, which leads us back to the concept of irony. This is certainly the case with 'embedded research' in this study, grounded in action science (Argyris et al., 1985), which can be characterized from a researcher's point of view as 'aiming at moving targets'. The reflexive nature of the action-science methodology will be further discussed in Section 2.4.

The relativist/pragmatist approach to this study is interwoven in the description of the theoretical concepts that frame the case study in this study: public policy networks, public policy innovation, and learning, all of which will be discussed in subsequent chapters.

2.2.2

CHARACTERIZING THE RESEARCH CHALLENGE

The research in this thesis is basically case-study research, and more specifically, a single-case study (Yin, 2003; Segers & Hagenaars, 1980). The objective of this specific case-study research is to reflect on the impacts of the learning course that was designed and implemented to support the designated community of practitioners in reflecting on their own (evolving) practice of innovation and knowledge transfer. Their reflections are perceived as necessary for internalizing generated knowledge and experiences, and for the possible improvement of the innovation practice and processes of knowledge transfer.

Active intervention into the object of study, the community of WINN practitioners, is an important trait of this study. It means that this study is inevitably framed in the methodology of action science. Argyris et al. (1985: 35) indicate that "action science is centrally concerned with the practice of intervention". The vehicle with which the intended intervention is organized and evaluated, is defined here as a learning course. This so-called learning course aims at providing the community of practitioners with the opportunity for regular reflection on their evolving innovation practice and processes of knowledge transfer. It is expected that through reflection on the course of events, potential advancement in or adjustment to their practice of innovation and knowledge transfer may be detected and/or changed during the execution of the innovation program. As such, the learning course should encourage the WINN professionals to act (more) as "reflective practitioners" (Schön, 1983). The learning course might contribute to the development of such reflective practice in the WINN program. Of course, it is not set in stone that innovation can only be reached

through deliberate reflective practice. It can be conceived through more or less accidental forms of work practice (see e.g. Brown & Duguid, 1991) but even then, some manifestation of reflection seems to be the case (see e.g. Orr, 1996).

This introduction reviews the components of the methodological approach designed to operationalize this study: case-study research, action science, and reflective practice. The reflection provided in the learning course is my interventionist method for this specific case study. It is aimed at producing knowledge to inform action, as a basis for reflective practice in WINN. The three methodological components of my study are discussed in the paragraphs below.

2.3

CASE-STUDY RESEARCH

Before examining the action-science approach to this case-study research, we must first acquire some notions about case-study research itself. Case-study research has been unraveled by Robert Yin. He (2003: 13) offers a technical definition of case-study research by examining two parts of this type of research: the scope and the strategies for data collection and data analysis. With regard to the scope of case-study research, Yin claims that “a case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not evidently clear”. This means that in case-study research, in contrast to laboratory experiments, a phenomenon is not abstracted from its context for examination, but deliberately takes its contextual circumstances into account. With regard to the strategies for data collection and data analysis, Yin (2003: 13-14) proposes that

case study inquiry copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result, relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result, benefits from the prior development of theoretical propositions to guide data collection and analysis.

Yin perceives case-study research as “a comprehensive research strategy” that is directed at establishing coherence in its design, data collection methods and specific orientations to data analysis. Tellis (1997: 3) thinks that case-study research connects to the principles of qualitative research: coherence in describing, understanding and explaining. The essential objective of case-study research is a holistic understanding of a culturally-defined system of action (cf. Feagin et al., 1991).

As may be clear from the previous introduction about the WINN program, this thesis is based on a single-case design. Yin (2003: 39-42) provides five rationales for applying a single case design. The first rationale is when a case study “represents the *critical case* in testing a well-formulated theory”. The second rationale is when the case study “represents an *extreme* or a *unique case*”. The third rationale for a single-case study is “the *representative* or *typical case*”. The fourth reason for designing a single case is when a *revelatory case* is concerned. And, the fifth rationale for “a single-case study is the *longitudinal case*”, that aims at examining the same single case at different moments in time. These rationales (author’s emphasis) suggest that case-study research is primarily concerned with the issue of representation. Case studies are designed to elucidate and represent certain significant situations.

If we look at the case study in this thesis, all rationales are relevant for the choice for a single-case design. Rationales 2 and 5 seem to be most relevant because they capture the idiosyncratic character of this particular case. The learning course in the WINN program can be perceived as a unique case, in the sense that cause, objective, and context are highly situational, and therefore rare. This specific case study examines the impacts of reflection on specific practices in a specific organizational context, at several moments in times and over more than two years. Therefore, I argue that these rationales elicit the reasons for the choice of a single-case design and not for comparative case-study research. In addition to the theoretical arguments for a single case-design, the practical considerations are equally important. It is virtually impossible to execute several, equally labour-intensive and detailed case studies at the same time. The reason for this lies in the need for availability and flexibility that the object of study, in this case a community of practitioners, tends to require from the researcher who is involved in action-oriented, interventionist research.

Yin (2003: 59) mentions five types of skills that a researcher should have in order to be able to carry out case-study research. A case study investigator (cf. Yin, 2003) should: 1) be able to ask good questions, 2) be a good listener, 3) be adaptive and flexible, 4) be capable of having a firm grasp on the issues being studied, and 5) be unbiased by preconceived notions. The required skills seem to be a balancing act between being genuinely familiar with the object of study and remaining somewhat detached from it. These skills are more or less in line with what an ‘embedded researcher’ should be capable of when conducting case-study research. Based on Yin’s advocacy for specific skills, we may conclude that the researcher must (or inevitably will) establish a relationship with his/her object of study, in order to gain access to vital data and to be capable of interpreting the collected data about the issues under study against the background of the specific context. However, Yin does not seem to refer explicitly to the reflexive and ironic nature of the relationship between researcher and the object of study. I think that case-study research will inevitably change the object of study, if only by paying focused attention to it. Next, I argue that each case-study researcher will establish

his/her idiosyncratic relationship with the object of study. This means that each researcher will generate an idiosyncratic set of data. The actual challenge lies in the researcher's ability to meaningfully interpret these data against the background of the theoretical concepts that frame the issues under study. In case-study research that has an explicit interventionist purpose, such as action science, it is additionally important that the interpretation of the collected data be recognized by the object of intervention, such as the community of practitioners.

Following the concept of action science, this specific case study was not 'out there' but had to be actively developed by me as an 'embedded researcher', in close cooperation with the WINN community. Especially the professional who was responsible for organizing reflection, the Forum Ervarum theme leader (see Section 1.6.3), had a significant influence on the actual manifestation of the learning course (see Section 2.5.2). This professional is designated as the contact person of the client organization for the learning course. As one can imagine, the development of similar case studies is not realistic from a time and resources perspective. And we may ask ourselves whether it would be possible to pursue additional comprehensive case studies for the central objective of this study. Each situation in which such an elaborate research process is established will work out so differently that a comparison between case studies cannot deliver additional insights into knowledge or theory. This removes the need for a multiple-case study design.

Hagenaars and Segers (1980: 61-62) refer to a potential pitfall in applying what they call a "one shot case study" for executing qualitative causal analysis. They indicate that in case-study research, a (problematic) situation is often thoroughly examined but without consciously documenting the starting situation (as a reference point). As a consequence, differences in between the starting situation and the end situation uncovered by case-study research, cannot be described or precisely explained. Next to this, they indicate that even a well-described starting situation is no guarantee for sound case-study research because this description can suffer from self-referentiality³ in a case where the researchers have described the situation themselves. The risk exists that conclusions may be (re-)framed to the starting situation, making the confirmation or disconfirmation of the hypothesis highly arbitrary. Segers and Hagenaars (1980) advocate to include 'objective data', such as documents or facts and figures, and pronunciations and judgments by the objects of study – that is, the community of social practice – to describe the starting situation. I argue that these pitfalls can be addressed through active collaboration with 'others', for example the practitioners that 'inhabit' the case study. Through active collaboration in describing and analyzing the starting situation as well as the preliminary and final results of the evaluation, self-referentiality

3 Referring to oneself or itself. cf. American Heritage Dictionary, fourth edition, 2000.

of the researcher(s) can be mediated. And, active collaboration of the community of practitioners is precisely what is organized and facilitated through an action-science approach. In addition to this, in this case study, generalization of the findings is enhanced by referring to theoretical concepts that are related to this particular case study: a community of practitioners within the public policy domain concerned with the practice of conceiving of and organizing innovation in water management. The relevance of these theoretical concepts, public policy networks, public policy innovation and policy analytical practice that frame the case study are retrieved from several publications, such as Hajer and Wagenaar (2003). The idea behind reasoning from a case study is to make “inferences about what actually transpired” (Yin, 2003: 61), based on an interpretation of the collected data, against the background that is provided by the theoretical concepts. Yin continues by claiming that “the inferences, in turn, must be based on convergent evidence from witnesses and physical evidence, as well as some unspecifiable element of common sense”. Case-study evidence is directed at supporting, differentiating, enriching or refuting the theoretical concepts-in-use. These theoretical concepts are further discussed in Chapters 3, 4, 5, and 6.

2.3.1

CONSTRUCTING A SINGLE CASE STUDY

As may be clear from the previous chapter, this case study was not ‘found out there’ but had to be actively developed by me, in close cooperation with the object of study, the community of WINN professionals. The case study was developed as follows. First of all, an *ex ante* evaluation was conducted to make stock of the professionals’ needs for reflection and ideas about methods for reflection. These needs for reflection, captured in specific topics, and the suggestions for reflective methods were tried out in two half-day learning sessions. And, after a favorable evaluation, a learning course was designed and implemented that was composed of four two-day learning sessions. After the first two learning sessions, the professionals on the WINN core team evaluated (in June 2005) the course of events in the learning course thus far and pondered the question of whether changes had to be made. They didn’t want changes made, so the next two learning sessions were organized as planned. The learning course was then evaluated by assessing the impact(s) on the innovation practice of the professionals involved, the important development of the innovation program, as well as the knowledge transfer about innovation activities. In the *ex durante* evaluation, new issues for reflection and ideas about methods for reflection surfaced. The next year, the learning course was again organized for four two-day learning sessions. This time, an interim evaluation of the learning course by the professionals themselves was not conducted – apparently the learning course was accepted as a ‘genuine’ component of the WINN program. After the sessions, two evaluations were conducted simultaneously: an *ex durante* evaluation of the previous learning sessions and an *ex post* evaluation of the learning course as a whole, as it had been organized the last two years.

The case study comprises a sequence of learning sessions and evaluation efforts that started in the Fall of 2004 with an *ex ante* evaluation of the need for reflection and ideas about reflective methods. That evaluation resulted in a number of topics for reflection that captured the needs of the participating professionals, as well as a provisional idea about the working methods with which these topics could be reflected on. The actual learning sessions in the learning course would be based on two components: the topics for reflection and the working methods. In 2005 the first series of four two-day learning sessions was organized. These sessions addressed most of the topics for reflection, using master classes and reflective sessions as working methods. This is discussed in more detail in Sections 7.2 and 7.4.

The first series of learning sessions was evaluated in the Fall of 2005. This evaluation resulted in an overview of the impacts of the learning course, as well as suggestions for new topics for reflection and alternative working methods. In 2006 the second series of learning sessions was organized. These sessions addressed the topics for reflection learning, again through master classes and reflective sessions as working methods. The nature of these working methods, however, was slightly changed to meet the new requirements. This is discussed in more detail in Section 7.6. The second series of learning sessions was evaluated in the Fall of 2006. In addition an *ex post* evaluation was conducted to assess the impacts of the entire two-year learning course on the practice of innovation and knowledge transfer in WINN.

2.3.2

LONGITUDINAL DATA COLLECTION AND TRIANGULATION

Over a period of two-and-a-half years, data on the impacts of the learning course for WINN were collected through the following methods:

- Three rounds of in-depth interviews with the WINN professionals who participated in the learning course: an *ex ante* evaluation in the fall of 2004, an *ex durante* evaluation in the fall of 2005, and an *ex durante* evaluation and an *ex post* evaluation in the fall of 2006. The questionnaires are presented in Appendix I. For an overview of the interviews see Appendix II.
- Observations in and reports on eight two-day learning sessions that were held in 2005 and 2006;
- Regular meetings with the contact persons of the client organization. These meetings will be discussed further in Section 2.5.2;
- Reflection with co-working researchers on the dynamics and results of each learning session.

With the variety of data collection methods, an attempt at triangulation of the research design was made. According to Yin (2003: 97), triangulation is needed when collecting “multiple sources of evidence” because it enables a researcher to address a broader variety of

cultural-historical, attitudinal and behavioral aspects of the object of study. Next to this, an important advantage of triangulation is “the development of converging lines of inquiry” (Yin, 2003: 98) that will support, legitimize, and make a reasonable case for the findings or conclusions because they are rooted in several sources of information.

Patton (1987) identifies four types of triangulation: 1) triangulation of data resources, 2) of researchers, 3) of theoretical perspectives on the same data set and, 4) of methods. My approach to triangulation attempts to address these types. The triangulation of data resources was described above. The triangulation of researchers is achieved through working with researchers from TNO⁴ and, in 2005, also from training institute Publiek Domein. In addition, the contact persons from the client organization, the successive theme leaders Forum Ervarum, can be perceived as ‘co-working researchers’ because of their continuous involvement in assessing and interpreting the outcomes from the various evaluations and in the role of being the ‘eyes and ears at WINN’, beyond learning sessions and evaluative moments. However, it is clear that I have functioned as the key researcher, because I designed and organized the learning sessions and executed the evaluations.

The triangulation of theoretical perspectives on the same data set was executed in a more distant, ‘secondary’ fashion. The object of study here, reflection on innovation practice and processes of knowledge transfer, is framed by a broader theoretical context, that of developing the practice of policy analysis in a specific context, namely public policy innovation for water management in a networked environment. The aforementioned coalescing concepts, public policy networks, public policy innovation and policy analytical practice constitute ‘the contemporary horizon of the object of study’. Next, the triangulation of methods is done by combining action-oriented techniques, the learning sessions, with empirical-analytical methods, such as the evaluations. The action-oriented techniques are then subdivided into different types of methods, see Section 7.2.

From a relativist/pragmatist perspective, it must be clear that this way of triangulation is by no means the only way of how it may be implemented. However, given the restraints and possibilities, the implemented triangulation was feasible for this study and acceptable to the community of practitioners involved.

2.4

ACTION SCIENCE

This study can be characterized as action science (cf. Argyris, et al., 1985). Based on the self-assessment memo of the WINN professionals and my *ex ante* evaluation, it had become clear that reflection was needed on the course of events in the innovation program

4 Ook wel bekend als de Nederlandse Organisatie voor Toegepast Natuurwetenschappelijk Onderzoek.

and, more specifically, on the innovation practice and processes of knowledge transfer. The learning course that is supposed to provide the desired reflection should be a central and inseparable part of the program, as indicated in Section 1.8. Reflection should be embedded in the innovation program, indicating that it should be “an integral part of the surrounding whole” (American Heritage Dictionary, 2004⁵). Being actively and frequently involved as a researcher in providing reflection leads to an embedded position in WINN as well, in the analogy of an embedded reporter in wartime. Here, embedded reflection relates to the WINN program as a part/whole relationship (cf. Bredo, 1994). This means that embedded reflection as part of the innovation program should contribute to, as well as be inspired by, what is going on in this program.

2.4.1

ACTION SCIENCE AS A FOUNDATION FOR PROVIDING REFLECTION IN THE LEARNING COURSE

It is expected that reflection will produce knowledge that can be used to inform action and, if perceived necessary, change the practice of innovation and knowledge transfer. In addition, the objectives and state of affairs of the innovation program itself, may also be changed, under the influence of the reflective efforts in the learning course. The objective of this study is to reflect on the impact(s) of the reflection provided during the learning course.

The concept of reflexivity, not to be confused with the idea of reflection⁶, is a valuable component for designing, organizing and facilitating the learning course within the relativist/pragmatic perspective. Reflexivity refers to the reciprocal nature of human agents and their social environment. Weick (1995: 31) indicates that

... there is *not* some kind of monolithic, singular, fixed environment that exists detached from and external to these people. Instead, in each case, the people are very much a part of their own environments. They act, and in doing so create the materials that become the constraints and opportunities they face.

This refers to the ‘mechanism’ whereby the actions of the human agents fold back on them because these agents shape the (social) environment in which they have to function. It is obvious that for an action-science approach, this mechanism is indispensable because it

5 To embed: 1. To fix firmly in a surrounding mass: *embed a post in concrete; fossils embedded in shale*. 2. To enclose snugly or firmly. 3. To cause to be an integral part of a surrounding whole: “*a minor accuracy embedded in a larger untruth*” (Ian Jack, *Granta* Fall 1988). 4. *Biology* To enclose (a specimen) in a supporting material before sectioning for microscopic examination.

6 In this respect, reflection must be perceived as mental concentration (cf. American Heritage Dictionary, fourth edition, 2000), based on conscious evaluation of previous experiences.

establishes the reciprocal relationship between research and its object of study as sought in this type of research. The reflection provided – in the intended learning course and its subsequent evaluations – ‘folds’ back onto me as embedded researcher who had designed and organized it. This ‘folding back’ generated invaluable information for the continuous adjustment of the learning course to the evolving needs for reflection of the professionals involved. Action science, therefore, thrives on reciprocity: its methods influence both participating professionals as participating researchers, and this is precisely the goal of this type of research (see also Section 2.4.5). The changes in needs for reflection are partially sparked by the provided reflection – that will undoubtedly tend to lag behind the immediate experience of being present in the learning sessions – but certainly also by the dynamics in the institutional context in which the professionals have to function.

2.4.2

A METHODOLOGY FOR THE EMBEDDED RESEARCHER

My methodological approach to this case study is rooted in action science. The action-science approach aims at actively providing reflection on the innovation practice of a specific community of practitioners of WINN professionals. Intervening in a community of practitioners calls for an action-oriented approach. There are many different ways to define such an approach. Methodological concepts such as action learning (Revans, 1980), action research (Lewin, 1948; McNiff & Whitehead, 2006), action science (Argyris et al., 1985), and interaction research (Hendriks, 2003; Kensen, 2007) are used next to each other, referring to researchers’ active interference with their object of study. Of course, there will be nuanced differences between these concepts. But for the objectives of this thesis, the exploration of these differences is redundant.

Therefore, I will speak of action science when referring to the interventionist approach of my research methodology. The reason for this lies in the ambition of Argyris et al. (1985: ix) to not only aim for “knowledge that can be used to produce action, but also to contribute to a theory of action”. This ambition is supported by Friedman’s (2001: 160) definition of action science: “action science attempts to bridge the gap between social research and social practice by building theories which explain social phenomena, inform practice, and adhere to the fundamental criteria of a science”. Argyris et al. (1985: xii) claim that their ambition is derived from Kurt Lewin’s idea that “one of the best ways of understanding the world is to try to change it”. Applying knowledge to produce action therefore leads to understanding action itself and its impact on the community and the world (cf. Argyris et al., 1985). This leads to a theory of action, that is, a general idea of what works why and how. In the presented case study, the attempt to reflect on and, if perceived necessary, change the innovation practice and processes of knowledge transfer should then lead to a better understanding of them. That, then, may lead to new knowledge that can create more insightful attempts to

change them. An iterative pattern of intervention, reflection, interpretation, and renewed intervention thus evolves.

A thorough introduction to action science is provided by Argyris et al. (1985). They emphasize that action science is an inquiry into social practice and it is directed at generating knowledge to support and inform the practice under inquiry. They characterize action science by distinguishing it from what they call “mainstream science” that is rooted in the widespread positivist traditions for conducting scientific research. Together with, for example, Susman and Everet (1978), Argyris et al. (1985) have made an assessment of the scientific merits of action research, in relation to the traditional, positivist traditions of scientific research. Argyris et al. (1985: 2) claim that “as a science that hopes to produce knowledge that can inform action, action science requires a conception of practical knowledge that goes beyond the common conception of choosing means to achieve predetermined ends”. I argue the perceived need for reflection in the WINN program calls for an action-science approach to provide this reflection. This proposition is convincingly supported by the following citation from Argyris et al. (1985: 4) in which the value of an action-science approach is elicited:

Action science is an inquiry into how human beings design and implement action in relation to one another. Hence it is a science of practice, whether the professional practice of administrators, educators, and psychotherapists, or the everyday practice of people as members of families or organizations. Action science calls for basic research and theory building that are intimately related to social intervention. Clients are participants in a process of public reflection that attempts both to comprehend the concrete details of particular cases and to discover and test propositions of a general theory.

Action science’s distinction from mainstream science is characterized by the acknowledgment that “the interpretative understanding of meanings cannot be reduced to regularities among events” (Argyris et al., 1985: 5). Mainstream scientific theories aim at the exact opposite. Next, in contrast to mainstream science, action science “attempts both to inform action in concrete situations and to test general theory” (Ibid. p. 5), thus avoiding the well-known dichotomy between fundamental and applied science. But most importantly, action science “takes a normative position” (Ibid. p. 5) instead of taking a “disinterested stance” (Ibid. p. 6). In my view, a normative position tends to be unavoidable since it is the aim of action science to initiate change, and change is informed by at least some notion of direction. The normative position of action science can be justified by referring to critical theory (cf. Habermas, 1984) as underlying argumentation. Argyris et al. (1985: 6) think that the value of the normative position of the researcher lies in the objective “to criticize what is, from the perspective what might be”. Action research, as a critical social science, “engages human agents in self-reflection in order to change the world” (Ibid. p. 6).

To avoid the situation that an embedded researcher has a direct interest in solely determining what the direction of change should be, I propose that the desired direction is conceived through a collaborative effort with community members who may implement the intended change. Any normative claims of researchers should be evaluated through the normative views of the members of social practice, participating in the action science research project. Their normative views are (implicitly) vested in their assumptions on how to go about generating knowledge, in the light of their practice. Argyris et al. (1985: 235) indicate that these assumptions are often implicit and that researchers should “make them explicit, so that propositions can be evaluated in the light of them”. Through checks and balances between researcher and practitioners, normative positions with regard to the knowledge produced can be balanced, with the application of this knowledge in practice as the ultimate guideline. In addition, we should bear in mind that this study is rooted in relativism. This means that any norming has a temporal, ironic nature. I argue that ironic normativity⁷ in action science, collaboratively conceived by an embedded researcher and the object of study (e.g. a community of practitioners), is necessary for conceiving some notion of direction about where to go from here. Without some notion of direction, action is hard to imagine, guide and/or initiate.

After this introduction to the concept of action science, it is worthwhile to briefly examine its connection to the theoretical perspective of relativism/pragmatism that frames this thesis. This connection is provided Argyris et al.’s proposition that action science is rooted in pragmatism, referring to Dewey’s theory of inquiry (1938) that “was a model both for scientific method and for social practice”. According to Argyris et al. (1985: 6) Dewey’s observation (1929: 24) that “science, in becoming experimental, has itself become a mode of directed practical doing” indicates that scientific experimentation is nothing more than a specific case of “human beings testing their conceptions in action”. Those same researchers (Ibid. p. 7) claim that this refers to a pragmatist epistemology (see also Section 6.7.2), connecting action science to the pragmatist perspective on (scientific) research. The relativist nature of action science is vested in the acceptance that knowledge about intervening (i.e. undertaking action) in a certain community of practitioners is temporal and restricted to this particular community.

Argyris et al. (1985) acknowledge that the psychologist Kurt Lewin contributed to the development of action science in a profound way through his idea of action research, a research concept that entails “examining social phenomena by changing them” (Lewin, 1946). In my view, their account of Lewin’s ideas about action research accurately captures the suitability

7 Referring to the well-known gap between is and ought.

of this concept for the case study in this thesis. Suitability is shown in the following quotes (Ibid. pp. 8–9):

- Action research involves change experiments on real problems in social systems. It focuses on a particular problem and seeks to provide assistance to the client system.
- Action research involves iterative cycles of identifying a problem, planning, acting, and evaluating.
- The intended change typically involves *reeducation* (authors' emphasis), a term that refers to changing patterns of thinking and acting that are presently well established in individuals and groups. The intended change is typically at the level of norms and values expressed in action. Effective re-education depends on participation by clients in diagnosis and fact-finding and on free choice to engage in new kinds of action.
- Action research challenges the status quo from a perspective of democratic values. This value orientation is congruent with the requirements of effective re-education, that is participation and free choice.
- Action research is intended to contribute simultaneously to basic knowledge in social science and to social action in everyday life. High standards for developing theory and empirically testing propositions organized by theory are not to be sacrificed, nor is the relation to practice to be lost.

In this specific case study the expressed need for reflection in WINN can be seen as a real problem for those active in the social system of this program. The learning course, meant to address the expressed need for reflection, makes extensive use of iterative cycles by means of regular evaluations, and aims at 'reeducating' the participants through collaborative examination of what is practiced and why. The participants are free to participate and to choose whether to apply knowledge that was produced by reflection in their own practice or not. Through reflection on the impacts of reflection provided in the learning course, I will attempt to contribute to a theory of action.

The relationship between action science and learning is clear. Without previewing Chapter 6, in which the concept of learning will be discussed, it should be noted here that the key characteristic of learning is change (see Section 6.2; cf. Burns, 1995; Barker, 1997; Guthrie, 1942). Action science is centrally directed at informing the practice of intervention (cf. Argyris et al., 1985). And intervention is principally aimed at changing things that are perceived to be unfavorable. In this sense, action science is capable of informing learning, by means of reflection on "the rules and norms of inquiry that are customarily enacted in the community of practice" (Ibid. p.35). Action science delivers knowledge based on which intervention can be designed to promote change in a community of practitioners, thus enhancing the community's capacity to learn.

2.4.3

THE ISSUE OF VALIDITY IN ACTION SCIENCE

As described above, normativity is one of the perceived threats to action-science approaches. Another threat is the issue of validity in action science research projects. Argyris et al. (1985: 237–238) warn researchers to avoid three obstacles that tend to threaten the validity of action science. And of course, challenging the validity of the outcomes of a specific methodological approach equals challenging the entire *raison d'être* of this method. It is my assumption that this is the reason why Argyris et al. devote extensive effort to answer the question of what the obstacles to validity of action science are and how they should be approached.

The first obstacle to validity is that “the data of action science are action, action is meaningful, and the meaning of action is ambiguous”. Schön (1983: 60), too, indicates that “the word practice is ambiguous”. The ambiguity of the meaning of action is caused by action science’s premises of relying on the participants’ interpretation of (aspects of) action or practice. Participants can attribute diverging meanings to the same action events, or identify different action events as being meaningful. At the same time, these meanings are volatile and may change over time⁸. This humanly understandable mechanism makes agreement on an intersubjective interpretation about what has happened no easy task.

The second obstacle is that action science relies on the process of reflecting on action events in a community of social practice. However, reflection can turn out to be threatening to the participants involved. As such, reflection may raise defensive responses that threaten the validity of the research. The outcomes of reflection may fold back on the participants involved in the learning that action science seeks to provide. It is possible that reflection will cause feelings of failure, anxiety and/or incompetence to surface among the participants involved. This mechanism, too, is perceived to threaten the validity of action-science approaches. However, it is safe to say that not many social contexts are capable of dealing with the flaws in practical performance in a constructive fashion. As a consequence, participants are likely to refrain from being open to scrutiny and keep certain ‘sensitive’ information concealed.

The third obstacle is caused by the nature of the action context which is laden with complexity. The learning process that action science may provide is “designed to push back some of the constraints of real-life conditions, and it also attempts to follow rules that are generalizable to any action context” (Ibid, p. 238–239). The objective of being serviceable to action encourages the action scientist to incorporate the complexities in the action context, increasing the complexity of the research design. In turn, the increased complexity of the research design may pose a threat to its validity.

8 The same mechanism is common to historic research.

My response to the obstacles to validity is as follows. With regard to the first obstacle, I argue that the mere danger of ambiguity is no reason to reject action science as a scientifically-viable approach to producing action-oriented knowledge. I think that ambiguity can be resolved by making productive use of the reflexive and ironic nature of action science: the provisional meanings that both researcher and participants employ are brought back into inquiry through reflection. The outcomes of reflection are then evaluated in the light of practice. In this case study, evaluation took place immediately during the learning sessions themselves and in the in-depth interviews with participants. Through working in iterative cycles (cf. Argyris et al.'s account of Lewin's ideas), it is my conviction that the community of practitioners, with the aid of an embedded researcher, was able to reach a collaboratively conceived and accepted interpretation of 'what is going on'. With regard to the second obstacle, I have taken the position that if participants are not ready to reveal 'sensitive information' in a safe and secure environment, such as reflective moments in an action science research project, they are certainly not likely to be willing to undertake action in the real-life context of organizational and/or policy processes. When practitioners are ready to talk about certain flaws in their practical performance, they are at the brink of undertaking action. In short, talk refers to action. This proposition is further examined in Section 2.5.4. In addition, Argyris et al. (1985: 238) claim that "the reflective process is therefore laden with the potential for anxiety and defensiveness as it is the impetus to learn. Action scientists must take these threats into account, building on participants' desire to learn while minimizing the threats posed by their defenses". I can endorse this claim but only by adding that reflection and learning, as built-in components of action science, must be considered iterative processes. Their iterative nature will enable both participants and researcher to gain a deeper understanding about what the flaws in practical performance refer to, through an incremental revelation of sensitive information.

The third obstacle tends to fold back on one of the criteria for conducting action science: that action science is grounded in mainstream science's claim for "empirically disconfirmable propositions" (Ibid. p. 232). It seems that this positivist principle folds back on the validity claim of action science, with which it attempts to distinguish itself from the positivist research tradition. However, for making a genuine difference in the course of events in a community of social practice by producing action-oriented knowledge, it is perhaps better to have to deal with validity issues than with the idea that the science efforts are perhaps perfectly validated, but, as a consequence, have no meaning for the action context of the community involved. In this sense I recall the pragmatist stance: anything that works (cf. James, 1907/2005) in the action context of the community concerned is valid. And again, a collaborative assessment between community members and embedded researcher of what is worth intervening in and what is not, and what types of interventions might be appropriate must be included to distinguish a pragmatic approach from 'merely doing something'.

2.4.4

THE RELATIONSHIP BETWEEN SCIENCE AND COMMUNITY: THE LOGIC OF ACTION

In action science, researchers construct an interactive and reciprocal relationship with their object of study: mostly social systems such as organizations, groups or communities. Argyris et al. (1985: 11) indicate that “the sciences of action take as their domain communities of social practice”. According to them Alfred Schutz has accurately described the idiosyncratic relationship between the action scientist and the object of study by stating that these sciences “deal in constructs of the second degree” (1962: 59). This statement points to the secondary position scientists have in relation to their object of study because they have to first become familiar with the intricacies of the community being studied before being able to conceive options for intervention. Action scientists have to work through a first analysis of meanings, issues and rules of the community being studied – that could be defined as constructs of the first degree – before being able to intervene in that community.

Following Argyris et al. (1985) the intended reflection is an attempt to foster a community of inquiry within the WINN community, engaged in the idiosyncratic social practice of conceiving of and organizing public policy innovation for water management. The question here is: what should the nature of knowledge be for the purpose of action? What is the idiosyncrasy of knowledge that intends to contribute to practice? The least we can assume is that this type of knowledge should differ from knowledge that is produced for ‘mere science’.

Knowledge in the service of action must meet the following conditions. First, action science should produce knowledge that can be implemented. This concerns the identification of variables that might be controlled by members of communities of social practice to initiate change in what they have defined as ‘problematic situations’ (cf. Dewey, 1903). Thus, action scientists cannot resort to discarding the implementation of knowledge from their responsibility. Being an action scientist means informing action based on the knowledge that was produced by the interventions. Next, knowledge should refer to “meanings embedded in action, at the logic of action” (Argyris et al., 1985: 20). This means that action science cannot rely solely on the analysis of social statistics which are only relevant when combined with meanings that refer to the social practice of the community involved. Interpretation and judgments, referring to these meanings, are inescapable forms of knowledge in any action science research design. These forms of knowing bring a third condition into play, that of involving the normative practice to which interpretations and judgments refer. Being normative as a (scientific) researcher tends to be a deadly sin. In action science being normative is not a crime because the produced knowledge aims at application in a context of action in which practitioners try to get from one situation to the next (see also Section 2.5.2). In my opinion, within the action-science approach, there is nothing wrong with being normative as long as the ‘normative knowledge’ is recognized and endorsed by the community of practitioners for whom and with whom this knowledge is produced. Normative knowledge

should refer to their specific practice in a context of action and their desire to advance this practice. The question of how this knowledge may be generated and translated into action is open to inquiry as well, because it enhances the validity for the community context in which it will be implemented. In this respect, normativity has an ironic connotation. Argyris et al. (1985: 20) advocate that “practice should be regarded as interdependent with the ways that knowledge is generated and with the kinds of theory sought”.

As indicated earlier, action science aims at producing knowledge to inform action. The logic of action, therefore, must be included in the research design. It is assumed that the logic of action can be retrieved by examining the language used in the context of that action (cf. Ryle, 1949; Argyris et al., 1985). The question is how more or less appropriate accounts of action can be made when using divergent statements and language as data. In addition, how might different researchers – and participating community members, for that matter – reach an agreement on diverging data about action? Ryle (1949: 54) thinks that this delicate matter can be resolved by assuming that “understanding is a part of knowing how. The knowledge that is required for understanding intelligent performances of a specific kind is some degree of competence in performance of that kind”. Ryle advocates that knowing how to perform is a prerequisite for the actual performance. Knowing how refers to a (personal) theory-of-action, an idea of how to go about a certain task.

The competence of actual performance is vested in the ability to speak about the (intended) performance: “The competence required to understand language may be compared to the ability to speak a language” (Argyris et al., 1985: 25). The ability to understand action relies on the (temporal) membership in a community of action. This means that in order to understand action, or practice, the researcher should be close to where the practice is. In my view, the action researcher should, or inevitably will, become embedded in the community whose practice (s)he tries to understand. Therefore, the embedded researcher must be engaged in the conversations taking place in the community of inquiry. Argyris et al. (op.cit.) refer to one of Ryle’s examples of clarifying this issue by claiming that “an observer can appreciate the stupidity or cleverness of chess players only if he knows the game”. For an action researcher, ‘being there’ is an indispensable precondition for understanding practice. However, even by taking the aforementioned into account, it does not solve the issue of “choosing among competing interpretations” (Ibid, p. 26, inspired by Bernstein, 1976) to develop new interpretations of practice. Argyris et al. (1985) seem to perceive this issue as a difficult aspect of conducting action science; at least they do not offer any easy solutions. They advocate that “providing multiple perspectives, each of which is a redescription of the action, seems almost a methodological principle of the counterview” (Ibid, p. 28), that is, action science as counterview of mainstream science. This means that the action scientist should aim at providing a thick description to represent “multiple layers of meaning” (cf. Geertz, 1973) that are in use in the designated community of social practice. In doing so, the action

scientist acknowledges that “different actors may hold different interpretations of the same action” (Argyris et al., 1985: 28). The final effort in dealing with the issue of choice among competing interpretations of practice is an “open discussion among members of a community of practice that can lead to an agreement that one interpretation is more adequate than another, even in the opinion of those who originally held the less adequate interpretation” (Ibid. p. 28). By pursuing this procedure it is acknowledged that the action scientist at least tries to do right with the whole purpose of conducting action science, that is, to produce knowledge in the service of action for a community of social practice.

Argyris et al. (1985) give some suggestions for designing methods for data collection in action science research projects. These suggestions are useful for avoiding the threats of validity that surround this type of research. Rules for action science guide data collection, hypothesis testing and data analysis, and, in addition, aim “to help participants to learn them, so that they can enact them as shared norms for inquiry in a learning context” (p. 239). Thus, the responsibility for a valid way of handling data in the research project is not restricted to the researcher but must be internalized and followed by the participating community members as well. This is necessary because the basic assumption for data collection in action science is what Argyris et al. (1985: 239) describe as “talk as data: a window onto the logic of action”. With this assumption, action scientists acknowledge that “action is informed by rules or tacit theories and that talk is an important form of social action” (Ibid, p. 239). In this sense, talk – that is stories, narratives, gossip, and other artefacts of semiotic mediation (cf. Wells, 1999) – is the vehicle for gaining understanding or making sense of the logic of action. In action science, talk is not just considered to refer to action but also to the underlying thoughts and feelings of the acting individual.

2.4.5

THE LEARNING COURSE AS COMMUNITY OF INQUIRY

The objective of the intended learning course is to reflect on and, if perceived necessary, change the practice of innovation and knowledge transfer in the WINN program. In general reflection should produce knowledge to inform practice (i.e. action) in a social context. In the case of the learning course, reflection should produce knowledge with which innovation practice and knowledge transfer in the WINN program can be changed or advanced. According to theories about action science, there is no need for a division of labor between those who are expected to generate knowledge and those who are expected to apply it (cf. Friedman, 2001). I would state that in doing research from an action-science perspective, a sharp distinction between those who produce and those who use knowledge is out of the question. This statement is based on my conviction that the legitimacy and eloquence of practice-oriented knowledge is strengthened by involving those who are expected to use this knowledge in the actual production of this knowledge (see also: Duijn & Rijnveld, 2007). The

role of the scientist, in my view the embedded researcher, is to create conditions under which practitioners can formulate and try out theories of practice for the purpose of changing, or advancing them – or as Friedman (2001) claims for the purpose of learning. This means that the objective of action science is research into practice, and not on practice (cf. Argyris et al., 1985).

In general, science seeks the development of a community of inquiry “whose central activity is the creation of knowledge” (Argyris et al., 1985: 29). From the perspective of mainstream science, such a community of inquiry produces knowledge that then is transferred to those who are expected to use it, such as a community of practitioners. As described earlier, a sharp distinction between science and practice has considerable flaws. Therefore, when it comes to creating knowledge to inform social practice, Argyris et al. (1985: 34) advocate integrating the roles of producing and using it through the active creation of “communities of inquiry in communities of social practice”. Friedman (2001: 160) indicates that “the goal of action science inquiry is to help practitioners discover the tacit choices they have made about their perceptions of reality, about their goals and about their strategies for achieving them”. The basic proposition of this stance is that by acquiring insight into these aspects of practice, practitioners can gain more control over their own practice. Friedman (2001: 160) claims that “if people can find the sources of ineffectiveness in their own reasoning and behavior, or their own causal responsibility, then they possess some leverage for producing change”. In this view knowledge is principally generated for gaining understanding and for solving practical challenges that are of concern to the community of practitioners.

In this sense the intended learning course may be perceived as an attempt to develop a community of inquiry within the community of practitioners, supported by the active engagement of an embedded researcher. This proposition is based on Argyris et al.’s claim that “action scientists engage with participants in a collaborative process of critical inquiry into problems of social practice in a learning context. The core feature of this context is that it is expressly designed to foster learning about one’s practice and about alternative ways of constructing it” (1985: 237). The learning course is intended to provide for this by means of structured and frequent reflection on innovation practice and the processes of knowledge transfer that evolve in the specific organizational context of the WINN program. This reflection should be based on a thorough and continuously evolving understanding of the intricacies and challenges of this specific practice and knowledge processes.

However, with Argyris et al.’s advocacy in mind, that there is no need for a division of roles between those who produce knowledge and those who use it, this means that in action science, practitioners must have a say in how the practice-oriented knowledge is produced.

This proposition goes further than Friedman's (2001: 160) exhortation that

creating communities of inquiry within communities of practice means that both researchers and practitioners must redefine their roles and develop a set of common values, norms, terminology, and procedures... Action scientists not only study social phenomena but also critically inquire into their own scientific practice. They need to be able to acknowledge and correct their own errors and to model skills of public reflection.

I argue that practitioners should be allowed to not only reflect on their own practice, but also on the researcher's practice of producing knowledge, simply because practitioners have a keen interest in this knowledge being legitimate, eloquent, and targeted at informing their practice. Thus, a community of inquiry is also concerned with examining and reflecting on the practice of knowledge production that aims at informing social practice. My understanding of action science's advocacy of developing communities of inquiry is that they have a reciprocal nature: communities of inquiry produce knowledge to inform social practice, and simultaneously, produce knowledge about the approaches or methods with which the practice-oriented knowledge is generated. For the intended learning course, this means that the outcome of reflection is also reciprocal: it should generate knowledge to inform action, that is, the change or advancement of practice and knowledge transfer, and it should support the collaborative inquiry by both practitioners and the embedded researcher into the reflective methods and approaches with which the knowledge is produced. The implications of this idea for the intended learning course in WINN are discussed in Sections 7.4.3 and 7.7.3 in which an assessment of the applied reflective methods by the participating professionals is included. The outcomes of these assessments were used to change and advance my practice as an embedded researcher in this specific community of inquiry.

2.5

THE ROLE OF EMBEDDED RESEARCHER IN WINN'S LEARNING COURSE

Following Schön (1983), Argyris et al. (1985: 2) "emphasize the role of the agent in setting problems as well as in solving them and the importance of reflecting on action to discover the tacit knowledge embedded in it". This emphasis is rooted in what they call "a critical theory that seeks to engage human agents in public self-reflection in order to transform their world" (Ibid. p. 2) which captures accurately my involvement as an embedded researcher in the case study.

2.5.1

MY ROLE AS EMBEDDED RESEARCHER

My role as an embedded researcher in this case study was operationalized in the design, the facilitation and evaluation of the desired reflection provided in the learning course. For productive and targeted reflection, the learning course must be responsive to the dynamics of the environment surrounding the innovation program. These dynamics may require new competences from the professionals. Therefore, emerging and urgent topics were taken up as new ‘topics for reflection’, receiving priority over other matters that had become less urgent. This was especially the case in 2006 when three newly emerging topics for reflection replaced the intended issues (see Section 7.9). In addition, the contextual dynamics may require alternative methods or approaches by which reflection is generated, thus changing the ways in which practice-oriented knowledge is produced.

In retrospect, my role as embedded researcher is best described through the following tasks. My first task was to make stock of, analyze and interpret the need for reflection by the WINN professionals, and to do the same with their ideas about how this reflection could be organized, in terms of methods. My second task included the translation of needs and ideas into a program for the intended learning course. Third, operationalization of the program for the learning course was made by proposing working methods and selecting and briefing eventual external contributors to the learning course, in close cooperation with the contact person for the learning course. The fourth task comprised implementing the operationalized program by chairing the learning sessions and facilitating the discussions, both plenary and in subgroups. The fifth task included writing the minutes of each learning session, in close cooperation with co-working researchers. The sixth task was the (*ex post*) evaluation of each learning session with the contact person of the client organization, i.e. the theme leader Forum Ervarum. This task included the role of being the advisor to the theme leader Forum Ervarum for issues related to learning and knowledge transfer in the WINN program. Lastly, and most importantly, the seventh task was to keep the learning course attuned to the evolving needs for reflection by the participating professionals. In this respect, as an embedded researcher I attempted to ‘guard’ the flexibility and responsiveness of the learning course with regard to providing knowledge for practice in the innovation program.

The latter task deserves some further explanation. I have characterized the group of WINN professionals as a community of practitioners. Learning in communities of practitioners is (often) approached from a relativist/pragmatist perspective (see also Section 2.2). What this proposition implies is further elaborated on in Chapter 6. However, some explanation here can elicit the methodology of this study, since methodology relies heavily on the role of the embedded researcher. Relativism in learning means that there is no way of predicting or deciding upfront what the participants will or should learn. We can only make an attempt to offer learning that addresses the need for reflective knowledge at that specific time, but we cannot be sure whether that attempt will be successful at that specific time. It is not pos-

sible to conceive beforehand or precisely the need for reflection of each individual because they all are involved in multiple and diverging professional environments simultaneously, in the innovation program, at their 'standard organization', with regard to the DG RWS's reorganization process (see Section 1.4.3), let alone in their personal lives⁹. Therefore, the impacts of reflection provided in the learning course on the innovation practice and knowledge transfer of the professionals involved should be put into perspective at all time because of the considerable influence of contextual and personal circumstances.

Pragmatism in learning means an openness to changes in the environment of the innovation program, as a basis for shaping learning courses while being involved in them. Of course, it is necessary to have some direction in the design and implementation of learning but this direction is only instrumental (cf. Dewey) by giving the participants some clue as to what they *might* embark on in each learning session. It is my proposition that the embedded researcher must be ready to abandon this direction at any time if, according to the participants, the need for reflection changes, even during the course of a learning session. The design of the learning sessions as well as the competences of the embedded researcher must convey the pragmatist approach to learning. This implies that the embedded researcher refrains from interference as much as possible, relying on the self-correcting and self-organizing mechanisms in the community of practitioners. Remember: it is their opportunity for reflection, so they are expected to, at least partially, take on the responsibility for its progress, dynamics, and outcomes.

Even though relativism/pragmatism is the guiding principle for the reflection provided, some attempts were made by both subsequent theme leaders Forum Ervarum to design the learning course in a more predictable and goal-oriented fashion. For example, after a while, I was urged to define tangible learning objectives¹⁰ for each learning session beforehand and draw up generic lessons learnt after each session. Moreover the openness to changes prior to and during the learning session were not always appreciated and sometimes even scrutinized, in an attempt to stick to the preconceived program of a learning session. These attempts resulted in continuous deliberations between the theme leader Forum Ervarum and me on the nature of the learning course and its *raison d'être*. The need for more 'structure and less relativism' was (pragmatically) acknowledged by formulating the learning objectives prior to each session and communicating them to the participants. Generic lessons learnt were not formulated by the researcher(s) but by the theme leader Forum Ervarum

9 This is often overlooked but is not hard to imagine that if one is preoccupied with personal dilemmas, the need for reflection and the subsequent 'learnings' will change. The actual state of mind, at least partly, determines in what way the 'learnings' offered will be recognized, accepted and processed. The same applies for institutional and organization-cultural biases, as well hindrances brought up by management and constituents. And let's not forget biases from (vocational) education and upbringing.

10 In Dutch: leerdoelen.

and the communication professional of the WINN program, based on their own observations and the reports on each session drawn up by me. The pragmatic nature of the learning course was never really challenged because reflection in itself tends to be a pragmatic activity. The practical value of the pragmatic approach is further discussed in Section 7.3 and illustrated in Section 7.6.2,

My influence as embedded researcher on the course of the learning course seems to be rather comprehensive because of my role as advisor to the theme leader Forum Ervarum with regard to the design and implementation of ‘learning’ at WINN. However, this influence must not be over-exaggerated but put into perspective, precisely because of the relativist/pragmatist perspective. The participants are perceived as the owners of the learning course, in the sense that they can decide, at all times, upon their needs for reflection and preferred methods. This precisely refers to the impact of the community of inquiry on the course of events in an action-science project: the practitioners’ tangible influence on the methods and approaches with which practice-oriented knowledge is produced. The professionals exercise their ownership in the evaluation interviews (*ex ante* and *ex durante* evaluations) and during the preparation and implementation of separate learning sessions.

The learning sessions were open to modification prior to their implementation, under influence of the participants’ needs. As an embedded researcher I had to be sensitive to this and even facilitated this mechanism because of the conviction that the participants themselves should decide on their need for reflection at that specific time. Learning-in-practice is targeted at changing or advancing that specific practice. This could mean that the professionals who were involved may have learned something that is not suitable for or supported by other (practical) perspectives. The practicing professionals are free to decide to learn about and reflect on issues that may not be favorable to or welcomed by other stakeholders involved who, for example, play other roles in WINN (see Section 1.6.3). Learning-in-practice is often a matter of learning-by-trying, a continuous process of finding out what works, why, and how while performing a specific task.

The topics for reflection that were formulated prior to each learning session could have become obsolete, due to events surrounding the program, urging its professionals to act. Through joint discussions and deliberations, the learning course was their opportunity for reflection on future actions. Nevertheless, this modification mechanism put much strain on my tasks as embedded researcher. Modification of the learning course’s program – sometimes barely a few hours prior to its start – was the case for some of the sessions. For a learning course that actively reflects on the evolving practice of its participating professionals, this is inevitable. It is my conviction that professionals or indeed any individual is more likely to learn when the opportunity for reflection acknowledges the actual challenges they are preoccupied with, their actual state of mind, at that specific time.

2.5.2

THE ROLE OF THE CONTACT PERSON FOR THE LEARNING COURSE

The formal contact person for the learning course (the theme leader Forum Ervarum) who acts as the delegated client on behalf of WINN (see Section 1.6.3) is only assigned part-time to the innovation program. The formal working environment is one of the specialist agencies of the DG RWS¹¹. The formal contact person for the learning course has held me, as embedded researcher, accountable for its design, organization, and evaluation. In turn, the theme leader guided the progress of the learning course by serving as a 'sounding board'¹² for me. In bearing the final responsibility for the learning course at WINN, the contact person inevitably had great influence on the course of action in the learning course. Hence, the design and implementation of the learning course can be perceived as a genuine co-production between the contact person for the learning course and me as embedded researcher. The content of each learning session was a process of deliberation between us, tossing around ideas on topics for reflection, the names of knowledgeable experts, working methods and intended outcomes. On some occasions other WINN professionals – mostly of WINN's program management – interfered with the preparation of an upcoming learning session by sharing information about events in the environment of the WINN program and by suggesting ways to tackle these events through the choice for topics for reflection, knowledgeable experts and/or additional participants. The contact person and I then conferred about how to deal with these suggestions. If these were evaluated favorably in light of the reflection on the innovation practice and processes of knowledge transfer, we adjusted the content and/or form of the learning session accordingly. The contact person had the final say on the content and design of each learning session.

In the two-and-a-half-year period this study describes, the learning course was guided by two different contact people for the learning course, each of them putting a different emphasis on specific needs for reflection. The first contact person emphasized the need for external expertise and experiences about more structured ways of organizing innovation processes. This refers strongly to the practices of knowledge transfer in the WINN program. This emphasis was translated into the program of the learning course, for example, by the selection of specific knowledgeable experts which was, of course, backed by the outcome of the *ex ante* evaluation (Fall 2004). The second contact person put more emphasis on the need for altering attitudes and behavior with which innovation could be conceived, organized and executed. This refers more to the learning course's objective for reflecting on and, if necessary, changing the practice(s) of conceiving and organizing water management innovation by the professionals involved. Or as WINN's program manager liked to phrase this:

11 In this case RIKZ, Rijksinstituut voor Kust en Zee in Den Haag.

12 In Dutch: als klankbord fungeren.

The learning course should support the (further) professionalization of the practice of the WINN professionals.

The tendency of inward instead of outward thinking and the bias of a one-dimensional engineering view on innovation were the ‘pet topics’ of this theme leader. However, these topics were also expressed in the DG RWS’s business plan 2004-2008, urging its professionals to accept a broader, societal outlook toward future challenges for water management and the subsequent needs for innovation. Yet again, the theme leader served as a spokesperson for the need for reflection in the innovation context of the DG RWS and, more particularly, in the WINN program. Both contact people were helpful in bringing to the surface relevant needs for reflection throughout the course of the learning course. And both of them trusted me as embedded researcher with the operationalization of these needs in each separate learning session.

2.5.3

REFLECTION ON MY ROLE AS AN EMBEDDED RESEARCHER FROM THE ACTION-SCIENCE PERSPECTIVE

This reflection in this section was executed by examining the criteria, potential pitfalls and rules that Argyris et al. (1985) have defined for conducting ‘viable’ action science. They advocate that action science must be grounded in the empirical-analytical research tradition which aims at constructing “empirically disconfirmable propositions”. At the same time, action science requires that “these propositions be falsifiable in real-life contexts by the practitioners to whom they are addressed” (Ibid. p. 232). Action science is thus grounded on two components. The first is the formulation of “empirically disconfirmable propositions”. The second component is putting these “empirically disconfirmable propositions” to the test in an action context, that is constructed by a community of social practice.

For this type of research they have identified (Ibid., p. 232–234) the following three criteria. First, “knowledge should include empirically disconfirmable propositions that can be organized into theory and falsified by practitioners in real-life contexts”. Second, “knowledge must be useful in action”. And third, “knowledge should speak to the forming of purposes, not just the means by which to achieve them”.

In this study, the learning course is the interventionist device for conducting action science. When I ‘evaluate’ the learning course on the aforementioned criteria, the following argumentation comes to mind. First, it is perhaps too pretentious to assume that the *ex ante* evaluation and the self-assessment memo, drawn up by the professionals themselves, have resulted in a set of empirically disconfirmable propositions. But the results of both evaluatory efforts as well as their translation in the learning course were recognized and accepted by the community of WINN professionals. In addition, I can make a viable claim that the professionals themselves have constructed a theory of action that indicates that the innova-

tion practice and knowledge transfer will benefit from reflection. This theory of action was tested through intervention in the real-life context of the innovation program. Second, the whole purpose of the knowledge generated by the evaluations and the learning sessions was to inform action. This action must be recognizable in changes in the conception and organization of innovation practice and processes of knowledge transfer in the WINN program. The appropriateness of the generated knowledge for use in action is described in Chapter 7. Third, the knowledge generated must be useful to achieving the purposes of the innovation program – through ‘appropriate’ innovation practices and processes of knowledge transfer – but also for gaining understanding and making sense of the context in which these purposes must be achieved. After all, the context and its dynamics shape the purposes of the innovation program, and therefore, of the practice of the professionals involved.

2.6

REFLECTIVE PRACTICE

The action science approach is meant to establish reflection on the evolving innovation practices and processes of knowledge transfer within WINN. For this reason, we must take a closer look at the concept of reflective practice.

2.6.1

AN INTRODUCTION TO REFLECTIVE PRACTICE

Perhaps the most prominent progenitor of the idea of reflective practice is Donald Schön. In *The Reflective Practitioner* Schön describes the concept of practice, more particular the concept of professional practice which is more suitable for this thesis, as follows. Practice refers to “performance in a range of professional situations” (1983: 60). Practice additionally refers to “the preparation for this performance” and to “the element of repetition in performance”. In Chapter 5 a specific type of professional practice is further examined: the practice of policy analysis, and more specifically, the practice of public policy innovation.

The question of whether any practice is reflective practice is justified. How does the idea of reflection coalesce with the concept of practice, and for what reason? Answering these questions starts with acknowledging that reflection plays an important role in learning in the context of professional practice (see Chapter 6). This proposition is articulated by Mink et al. (1993: 8) who indicate the value of critical reflection as follows:

To learn from our experiences we must become competent in taking action while simultaneously reflecting on that action. To effectively initiate, implement, and sustain transformation, we must reflect on the values behind our actions. We must be willing to reflect critically on

what we are doing. Theories should guide practice, and then practice should inform theory. We should always be learning and analyzing as a way of organizational life.

According to Preskill and Torres (1999: 101) many theorists agree that reflection is “a process whereby we carefully consider the knowledge, beliefs, assumptions, actions and processes that influence our behavior in order to understand our experiences”.

These definitions indicate the value of reflection for examining and questioning existing practices with the objective of identifying possible improvements or readjustments in light of evolving requirements. The question for what reason reflection enters practice is answered by Schön (1983: 56) who claims that “much reflection-in-action hinges on the experience of surprise”. With this phrase Schön refers to the practical situations which call for reflection, that is, situations that are unknown and challenging for the practitioner. Situations in which practice-as-usual is effective do not call for reflection. This is supported by Issitt (2003: 180) who claims that reflective practice is “conceived of as an interactive process in order to face unique, uncertain conditions, so-called indeterminate zones of practice, for which there are no blueprints that can translate into straightforward solutions”. In stable and familiar situations, practice mastered by the practitioner does not need reflecting upon because its outcomes are appropriate, the action itself does not deliver problems, and the theory-in-action is perceived to be appropriate and acceptable.

Schön (1983: 62) indicates that specialization and repetition in professional performance tend to undermine the practitioner’s competence in dealing with surprises and uncertainties: “reflection-in-action... is central to the art through which practitioners sometimes cope with the troublesome ‘divergent’ situations of practice”. Schön points to the tension between repetitive practice and reflection by stating that “as a practice becomes more repetitive and routine, and as knowing-in-practice becomes increasingly tacit and spontaneous, the practitioner may miss important opportunities to think about what he is doing” (Ibid. p. 61). Schön advocates to accept reflection as a way out of this pitfall. Through reflection, the practitioner “surfaces and criticizes the tacit understanding that have grown up around the repetitive experiences of a specialized practice, and can make new sense of the situations of uncertainty or uniqueness which he may allow himself to experience” (Ibid. p. 61). This refers to the value of reflection while performing in practice, that is reflection-in-practice: “it is this entire process of reflection-in-action which is central to the ‘art’ by which practitioners sometimes deal well with situations of uncertainty, instability, uniqueness, and value conflict” (Ibid. p.56). In such ‘processes of evaluation’ action is reflected upon by assessing the outcomes, its nature and the intuitive knowing that constitutes it. For eliciting the relevance and added value of reflection for any kind of social practice, I have paraphrased Schön’s following line of reasoning: “based on a mostly implicit theory-in-action, practitioners act. The outcomes of this act are ‘evaluated’ and if found to be not accurate (enough), the action

may be revised, through an action-response. If the revised action has not improved then the practitioner may resort to theory-response, where instead of the action, the theory-in-action will undergo revision when basic assumptions and/or knowledge available to the practitioner were not sufficient for successful action”.

Schön (1983) argues that reflection-in-action is congruent with the pace and duration of the situations of practice. The objective of reflection-in-action varies with the constituting variables of practice. Schön (Ibid., p. 62) includes “tacit norms and appreciations, which underlie a judgment, or on the strategies and theories implicit in a pattern of behavior”.

I argue that reflection-in-action may be directed to all aspects of practice, denominated by Wagenaar and Cook (2003), see Section 5.3.1., provided that these aspects are put under pressure by the characteristics of the context of practice, such as ambiguity, uncertainty and volatility. As indicated in the chapters to come, the practice of policy analysis is liable to be influenced and shaped by these dynamics (see e.g. Hajer & Wagenaar, 2003).

After this introduction to the rationales behind reflective practice, I present some definitions that, in my view, accurately capture the nature of the concept, in light of the collaborative attempt of the participating professionals and me as embedded researcher to establish some form of reflective practice at WINN. This reflective practice is inspired by the community of inquiry that is developed through the intended learning course (see Section 2.4.5). Moon (1999: 63) defines reflective practice as “a set of abilities and skills, to indicate the taking of a critical stance, an orientation to problem solving or state of mind”. Biggs (1999: 6) indicates that

a reflection in a mirror is an exact replica of what is in front of it. Reflection in professional practice, however, gives back not what is, but what might be, an improvement of the original.

Issitt (2003: 174) describes reflective practice as “the demonstration of competence to reflect on and evaluate one’s own values, priorities, interests, and effectiveness and to synthesise knowledge into the development of one’s own practice”. These definitions each have their relevance for pursuing (some kind of) reflective practice in the WINN program. The community of inquiry, developed by the intended learning course, was expected to give the WINN professionals the opportunity to evaluate and review their experiences with practicing water management innovation. Next, it aims at identification of ways to improve these practices. Lastly, it taps into alternative sources of knowledge that can be used for reflecting on and, if necessary, changing innovation practices and processes of knowledge transfer at WINN. In the description of the case study given in Chapter 7, these expectations of the learning course will be reviewed.

2.6.2

CONNECTING REFLECTIVE PRACTICE TO
THE RELATIVIST/PRAGMATIST PERSPECTIVE

The aforementioned definitions indicate that reflective practice, in line with the concept of action science, is a normative conception that aims at producing knowledge in the service of practice, not solely on what is, but explicitly on what might be. In addition both concepts tend to distinguish themselves from positivist research traditions, denominated by Argyris et al. (1985) as “mainstream science” or as “the model of technical rationality” (Schön, 1983). Schön has the ambition of developing a ‘rigorous’ epistemology of practice “which places technical problem solving within a broader context of reflective inquiry”. Both concepts are commonly linked to the tradition of critical knowledge (cf. Habermas, 1984). Action science, as well as reflective practice, aims at producing practical knowledge, or reason in the robust sense, as it is “embodied in cognition, speech and action” (Habermas, 1984: 10).

As a consequence of the relativist/pragmatist inquiry that frames this study, it is inescapable that an action-science approach must balance between ‘spontaneous emergence and deliberative design’ of the intended reflection. The pragmatic approach to this study acknowledges, elicits and utilizes the situated and situational nature of reflection. The intended reflective intervention makes productive use of the spontaneous dynamics and needs expressed by those who undergo this reflection. It must remain operative, even when any pre-set idea of what it takes to facilitate the desired reflection has to be abandoned. This suggests that the learners themselves must have a decisive influence on what is offered for reflection, in an attempt to avoid any positivist pitfalls. However, it is clear that if learners resort to an interventionist device, such as the learning course here, they cannot escape some form of deliberate design of it. Leaving reflection entirely open to spontaneous emergence was apparently not feasible for those who deliberately ‘put learning at the heart’ of the WINN program. Some notion of direction about reflection and learning seems to be inescapable in an organizational culture that is not known for its reflective capacity (see Section 1.6.5).

Based on the foregoing deliberations, I must make one important remark with regard to the concept of reflective practice. Reflection provided in the learning course can by no means be perceived as the final and definite form of reflection that leads to perfect innovation practice(s) and optimal processes of knowledge transfer. The reflection provided can be perceived as ‘temporarily appropriate’ for the needs at that specific point in time which, in turn, also applies to the practice which is reflected upon. Certainly in processes of public policy preferences, alliances, and opportunities shift continuously, not to mention the sense of urgency which with they are associated. In line with Schön’s (1983) observation reflection is attached to “experiences of surprise” which induces us to accept an ‘ironic’ (cf. Rorty, 1989) position to this concept and the action oriented knowledge it produces. If reflection is capable of changing, and perhaps even improving practice, then this will have an ‘ironic’ nature too. Moreover the knowledge generated through reflection may have ‘the noble in-

tention' (cf. Frissen, 2007) of improving or advancing practice that was reflected on. But we cannot preclude the possibility that implementation of this knowledge may not lead to improvement, and perhaps even deteriorates the practice-in-use, for example under influence of its changed context.

2.7

PRESENTATION OF THE CASE STUDY

The case study will be described in Chapter 7 along distinct distinguished moments of evaluation in the learning course: *ex ante* evaluation (Fall 2004), implementation of the learning course during 2005, first, *ex durante* evaluation (Fall 2005), implementation of the learning course during 2006, second, first *ex durante* evaluation (Fall 2006) and *ex post* evaluation (Fall 2006). The outcomes of these evaluations are described along the changes in what I have called 'the aspects of innovation practice' (see Sections 7.5.3 and 7.8.3). In the description of the case study (Chapter 7) significant citations of the professionals involved¹³ are singled out. These are largely derived from the in-depth interviews with the professionals participating in the learning course. The minutes of these interviews were open for review and scrutiny by those interviewed. They could review the reports of the interviews and make textual adjustments in case they did not agree with my reproduction or interpretation. It was my deliberate choice not to use any pronunciations of the participating professionals in the learning sessions. After all, reflection is largely served with a safe and secluded environment that must not be compromised by using quotes that could not be authorized or reviewed by the participating professionals. As an embedded researcher I aim for protecting the participants from throwing their pronunciations in the open because these were often expressed 'in the heat of the moment'. An anonymous reproduction of pronunciations will detach them from the actual situation in which they were expressed. These quotes are primarily colored by the personal situation, role and experience of the professional concerned. By making them anonymous, their entire rationale will vanish, leaving nothing more than empty phrases. However, this approach to the verbal data does not refer to the information collected through my participatory observations as an embedded researcher in the learning sessions, for which I can be held fully accountable because they are *my* observations.

13 Giving a modest ethnographic flavor to this action science endeavor.

2.8

RECAP OF THE RESEARCH OBJECTIVE: THE CENTRAL RESEARCH QUESTION REVISED?

The acknowledgment that the group of WINN professionals can be accepted as a community of practitioners gives a valid argument for using pragmatic concepts about learning and knowledge transfer that are commonly linked to the concept of communities of practice.

After all, the concept of communities of practice makes a plea for acknowledging the highly situated and situational nature of practice based learning and knowledge transfer that evolves in this type of (informal) professional groups (see Section 2.2).

This study aims at reflecting on the impacts of reflection on the innovation practice and the processes of knowledge transfer at WINN. For the purpose of this thesis, the aforementioned definitions (Mink et al, 1993; Biggs, 1999; Issitt, 2003) of reflection-in-practice are appropriate for assessing its emergence and impact in the community of WINN professionals, inspired by the intended learning course. Here, the learning course is the designated form of action-science approach for this particular case study. It has the objective of producing action-oriented knowledge for this community's desire to reflect on and, if necessary, change their innovation practice and processes of knowledge transfer. Their action-oriented knowledge can be used to identify and implement potential improvements. According to the text of the self-assessment memo (Section 1.8), the learning course might develop into the practitioners' best-practice methods for establishing reflection on their activities in the WINN program. In doing so, this approach must enable the practitioners to deal with the contingent and ironic nature of the context in which the professionals have to perform.

This study's objective is to reflect on the impacts of reflection on the practice of innovation and knowledge transfer that is provided for a designated community of practitioners. This reflection is directed at informing action, that is, change, and potentially improving both the practice of innovation and the transfer of knowledge. Therefore, the central research question of this study has two components and reads as follows:

What are the impacts of reflection, provided by the learning course, on the practice of innovation and knowledge transfer, in this specific community of WINN professionals? and,

How can the impacts of reflection be explained and understood, when confronting them with the relativist/pragmatist concepts of learning-in-practice and boundary spanning?

The relativist/pragmatist concepts were addressed briefly in Section 2.2. and will be discussed more thoroughly in Sections 6.8 and 6.9.

Based on a reflection on the impacts of reflection, the action-science approach 'prescribes' that an attempt has to be made to contribute to a theory of action. In this study, the theory of action assumes that reflection is capable of informing change, if perceived necessary, in the innovation practice and processes of knowledge transfer in the WINN program.

The theory of action that underpins this study assumes that embedded reflection will inform change in both innovation practice and knowledge transfer in the WINN program, if perceived necessary by the community of practitioners involved.

Informed change will be inevitably aimed at improving or advancing the practice of innovation and knowledge transfer in WINN. Change, based on reflection, is aimed at improvement of what is reflected on. This assumption is also substantiated by Biggs (1999: 6) who claims that "a reflection in a mirror is an exact replica of what is in front of it. Reflection in professional practice, however, gives back not what is, but what might be, an improvement of the original". However, it is clear that the aimed-for improvement has an ironic nature: improvements will always be provisional to the background of ever-evolving contextual circumstances. What is appropriate today may become obsolete tomorrow. It is with this knowledge that the community of WINN professionals attempted to use the outcomes of reflection to change and, potentially, improve their innovation practice and transfer of knowledge.

2.9

AND FINALLY...

The final issue in this methodology chapter is how to answer the central research question formulated above and how to assess the theory of action. The reflected-on impacts of the reflection provided in the learning course will be interpreted along the relativist/pragmatist manifestation of both practice and knowledge transfer that unfold in this specific community of practitioners. These pragmatist concepts are learning-in-practice and knowledge transfer as boundary spanning and will be introduced in Chapter 6. Chapter 7 is dedicated to elaborate descriptions of the learning course, along its evaluatory efforts. In Sections 7.8 and 7.9, the first component of the central research question will be answered. This concerns the question of how to explain the identified impact of reflection on innovation practice and knowledge transfer provided in the learning course. In Chapter 8 the impacts of the learning

course will be reflected upon. This reflection aims at giving an answer to the second component of the central research question, that is, an interpretation of the impacts of reflection based on the relativist/pragmatist perspective on innovation practice and knowledge transfer. In Section 8.6, the theory of action that underpins this study will be examined. In Chapter 9, I will attempt to zoom out from the level of the case study to a higher level of abstraction by assessing the methodological and contextual dimensions of this study.

Chapter 3

Network Society and Public Policy Networks

3.1

INTRODUCTION

In this chapter the contextual environment in participatory processes of policy analysis and innovation is discussed. The contextual environment is shaped by what we now commonly call the network society (Castells, 2000).

The first component of this chapter is a description of the characteristics of ‘the network society’. The second component of this chapter is the theoretical reflection of networks. This is done by dissecting the composition of networks, i.e. the relationship between individual and network (as social environment), as in the relationship between part and whole. It is discussed by means of the actor-network theory (Callon & Latour, 1981). The network society and the mere existence of networks as societal and organizational fabric inevitably have consequences for public policy and innovation processes. Third, along the concept of policy networks, the consequences of the network society for governance are discussed. Fourth, the question arises how governance is taking place in a network environment. This is often referred to as policy network management (Teisman, 1992; Klijn, et al., 2000). The assumption behind network management is that the network characteristics of our societies can be productively used for policy objectives. The fifth ingredient in this chapter is the theoretical interlude. In this interlude, the relativist/pragmatist inquiry is conducted with regard to the concept of networks. The interlude shows that fragmentation, contingency and interdependency constitute networks and shape them accordingly (Frissen, 1999). The sixth ingredient in the chapter discusses the implications of network characteristics for public policy analysis and innovation and learning, as stepping stones for subsequent chapters.

3.2

CHARACTERISTICS OF THE NETWORK SOCIETY

‘The Rise of the Network Society’ (2000) is the first volume of a trilogy The Information Age: Economy, Society and Culture with which the Spanish sociologist Manuel Castells makes an elaborate attempt to analyze and characterize the current state and future developments in today’s (Western) capitalist societies. Castells draws attention to the characteristics of our society that has developed into a global network of economic, social, cultural and technological relations. In his view, today’s network society has become manifest in entities that are simultaneously cause and effect, in the sense that they have initiated, currently sustain, and are likely to further develop the network nature of our society. These entities are: 1) the information technology revolution, 2) the new economy, 3) the network enterprise, 4) the transformation of work and employment, 5) the culture of virtual reality, 6) the space of flows, and 7) the concept of ‘timeless time’. In my view the first four entities can be considered technological and (socio-) economic entities, whereas the latter three can be perceived as (socio-) cultural entities.

3.2.1

TECHNOLOGICAL AND (SOCIO-) ECONOMIC ENTITIES

The technological and (socio-) economic entities are closely related, simultaneously defining and shaping each other and, therefore, create a self-perpetuating and self-organizing fabric of interaction. However, the revolution in information technology (e.g. vested in applications such as the Internet, mobile communication, real-time information processing and consultation) is considered to be the initial driving force behind the ‘networkification’ of society. This is explained in the following paragraph.

The revolution in information and communication technology resulted in a profound change in economic life. It changed both the way of doing business (e.g. e-commerce services, real-time execution of transactions) and the business landscape itself. The sector of information and communication technology became the fastest growing economic sector, with serious impact on other economic sectors, such as trade, retail, logistics and financial services. Also, non-commercial sectors such as education, health care and the military were affected (e.g. by applications for distance learning, electronic and online client-file systems and computer-based warfare). The redesign of information about the economy has stimulated the globalization of economic activities. Production, design, research and development, transportation and sales are no longer confined to the same geographic locations. Companies can more easily expand their activities around the globe, enter new markets and follow the most favorable conditions for each separate activity of their production processes. Distances are overcome by new ICT-applications and, in turn, information and communication technology is stimulating the doing of business with other companies by the rapid

exchange of information and almost real-time transfer of money, etc. As a consequence, global, decentralized, de-localized companies have emerged, referred to by Castells (2000: 163) as “network enterprises”. These network enterprises are scattered around the globe, entering both private and (semi-)public domains. The emergence and functioning of the network enterprise has profound consequences for the way work and employment are nowadays organized. The division of labor is no longer confined within a local or regional context, but globalizes rapidly, following the most favorable price-quality ratios. This has led to the global outsourcing of former key activities by network enterprises. Outsourcing means the loss of labor in developed countries and an increase in employment in what were once ‘educated jobs’ (e.g. information processing ‘factories’ and call centers in India) to developing countries.

As argued above, these technological and (socio-) economic entities have become highly intertwined. The current network enterprises demand new information and communication technologies to help expand their current businesses, enter new ones and control their efficiency. In turn, the strengthened technological possibilities are stimulating and provoking new, more globalized, specialized and fragmented economic activities that will continuously change and refine the distribution of work and employment.

3.2.2

SOCIO-CULTURAL ENTITIES

The technological and (socio-)economic entities mentioned above have resulted in substantial socio-cultural impacts. Castells refers to the virtualization of the media and communication, the importance of flows over places and the altered perception of time. The invention of new information and communication technologies makes communication faster, more intense and more tangible. These technologies turn distant and detached events into nearby personal experiences. New media cross the once sharp line between reality and fiction, creating events of virtual reality that enter our conception of what is true. Events that take place on the other side of the world lose their virtuality and become undeniably real through live TV coverage and real-time web pages. In addition, the distinction between real and invented events (reality shows on TV) have become blurred when these events enter our everyday life routines.

The mere existence of networks and their capacity to facilitate transactions (via interaction) has more influence on socio-cultural developments than the substance that is the driver for the necessary transactions. And as we have seen, societal and economic networks have expanded throughout the world, in different time zones and corresponding work regimes. Moreover, transactions are executed and information is exchanged through networks in real-time modes, enabling *and* urging people and businesses to undertake further action immediately. In order to meet these changed circumstances, we transform our readiness and availability to be able to act at all times and not just during working hours. This trans-

formation results in what Castells (2000: 465) calls “timeless time”, a concept of temporality that refers to the dominance of the space of flows, without denying the existence of places. With the concept of timeless time, Castells refers to the social domination that is exercised through the selective inclusion and exclusion of functions and people in different temporal and spatial frames. Moreover, there is considerable evidence that we are experiencing a dramatic transformation. This transformation is oriented at creating “a forever universe that is not self-expanding but self-maintaining, not cyclical but random, not recursive but incur-sive” (Ibid. p. 464). Linked to the idea of timeless time is the concept of acceleration. Castells refers to Gleick (1999) who has documented the acceleration of just about everything in today’s societies, in a relentless effort to encompass time in all domains of human activity.

3.2.3

SPACE AND TIME

In the section above some indications were given about the changing relationship between space and time. This change is characterized by a shift from the emphasis on space to an emphasis on time. Castells (2000: 463) explains this shift as follows: “Modernity can be conceived, in material terms, as the dominance of clock time over space and society”. He refers to Giddens and Lash and Urry, authors who have elaborated on the increased importance of time in our daily life. Giddens (1984) refers to time as the repetition of daily routines, whereas for Lash and Urry (1994: 229) the value of time is vested in “the mastery of nature, as all sorts of phenomena, practices and places become subjected to the disembedding, centralizing and universalizing march of time”. Castells argues that their conception of time points to one of the founding principles of both industrial capitalism and statism. He refers to the rigid use of time on assembly lines in the early twentieth-century factories, in both capitalist and Communist states. Several time regimes became standard for establishing global contact (e.g. Greenwich Mean Time) and the formation of new empires (e.g. Moscow time). But these rigid time regimes, Castells calls them “linear, irreversible, measurable and predictable”, came under pressure in the network society. And in return, these (socio-) cultural entities have their affect on technological and (socio-) economic development. The expansion of media-based firms (the creative industry) is substantial and exercises a considerable demand for new technologies and the formation of new economic networks. Information and communication technology firms and media-conglomerates have become more and more intertwined.

3.3

THEORETICAL REFLECTION ON THE CONCEPT OF NETWORKS: THE ACTOR-NETWORK THEORY

In the previous paragraph the concept of networks was introduced by elaborating on the societal and technological developments that have led to their emergence. Now that we have a clear idea about their origin and existence, we can look into their constellation from a more theoretical perspective. This theoretical reflection is based on the actor-network theory. This theory was developed to assess the dichotomy between society and technology, and the way they constitute and influence each other. This influence can be perceived from two opposite stances: social and technological determinism. The first claims that technologies are shaped and developed based on the demands of society. In this view, technologies are through and through social. The second view advocates that society is largely shaped by technological progress and that the development of technologies is a highly autonomous process. It is obvious that social and technological determinism are valuable to understand the influence that society and technology have on each other's development. However, these opposites fall short in explaining the interdependency between both entities. This shortcoming leaves us with questions, such as which entity is leading?, and is technology constructed by societal dynamics or is society shaped by technological developments?

3.3.1

FOUNDATIONS OF THE ACTOR-NETWORK THEORY

The actor-network theory is an approach to reflect on social and technological changes developing simultaneously. The actor-network theory's objective is to describe a society of human beings and non-humans as equal actors tied together in networks that are developed and maintained to reach particular goals.

The actor-network theory has been developed and advanced by the French sociologists Bruno Latour and Michel Callon. An explanation of this theory can be based on the terms that give this theory its name: actor and network. According to Latour (1992: 241), actors are "entities that do things". Some of the things that actors do have become so stable and predictable over time that they are treated as facts. The factual things become actors themselves and function as 'black boxes where only the input and output matter' (cf. Latour & Callon, 1981). Akrich and Latour (1992: 259) offer an alternative definition of the actor concept: "Whatever acts or shifts action, action itself is defined by a list of performances through trials; from these performances are deduced a set of competences with which the actant is endowed... An actor is an actant endowed with a character".

These actors and the things they do can be of both a human and non-human nature. The distinction between human and non-human is less important than the entire, collective

dynamics, Latour (1992: 243) speaks of “competences and actions” that are ‘attached’ to an actor. Actors are commonly considered to be human, or at least human or social constructs, such as organizations. However, non-human actors, such as money or law, are equally characterized by shaping powers causing dynamics between other actors with which they constitute a network. The vital difference between human and non-human actors is that human actors are of a reflexive nature, whereas non-human actors are not. Human actors continuously reflect on their existence and behavior and are capable of change based on that reflection. Non-human actors cannot reflect on themselves, and thus are not capable of change, without human intervention.

Next, the concept of network must be described to understand the actor-network theory. The concept ‘network’ refers to “a group of unspecified relationships among entities of which the nature itself is undetermined” (Callon, 1993: 263). Castells (2000: 501) defines networks as “a set of interconnected nodes. A node is the point at which a curve intersects itself”. Networks tie together both human and non-human actors. Networks are the result of both sociograms (the system of human actors) and technograms (the system of non-human actors). These systems should be studied in an integrated manner because they are highly interdependent and interconnected. The dynamics that accompany both human and non-human actors have undeniable consequences among other actors with which they form a network (cf. Latour, 1987). For example, a change in policy can cause actors to alter their objectives and adjust their behavior; a change in legislation can lead to the establishment of new (policy) actors and the abolishment of others.

The inseparability of actor(s) and network(s) is the main characteristic of the actor-network theory. Stalder (1997¹: 7) advocates, in line with this theory, that “actor and network are mutually constitutive”. Callon (1987: 93) explains the inseparability of the two concepts as follows:

The actor-network is reducible neither to an actor, nor to a network. Like a network, it is composed of a series of heterogeneous elements, animate and inanimate, that have been linked to one another for a certain period of time...An actor network is simultaneously an actor whose activity is networking heterogeneous elements and a network that is able to redefine and transform what it is made of.

Granovetter (1985: 482) speaks of “embeddedness” to explain the inseparability of two entities (in his article, the interdependency between economics and culture). Granovetter indicates an inextricable relationship between economic dynamics and social and institutional contexts. This embeddedness also applies to actors and networks.

1 Source: http://felix.openflows.com/html/Network_Theory.html. Retrieved: Spring 2004.

3.3.2

ACTOR-NETWORK DYNAMICS

An aligned network can be considered an organizational setting aimed at a collaboratively conceived and accepted goal. Each of these settings has specific properties that enable or disable the attainment of certain things. In the actor-network theory, these properties are called prescriptions. Prescriptions are defined by Akrich and Latour (1992: 261) as “what a device allows or forbids from the actors that it anticipates”. It is the characterization of the morality of a setting, both negative – what it prescribes – and positive – what it allows. Another key component of actor networks is the intermediaries that tie actors together in a network, and that connect new actors to an existing network. Bijker and Law (1992: 25) indicate that an intermediary is anything that “passes between actors in the course of relatively stable transactions”. In this respect, intermediaries can be perceived as ‘the network’s language’. Intermediaries vary from text, products and money, to more vague artefacts such as ‘ways of conduct’. Using the metaphor of language to describe the function and importance of intermediaries, makes eminently clear that networks may be understood as ‘patterns of communication’. Through intermediaries, objectives, intentions and power are exchanged. In doing so, the character of networks is shaped, distinguishing one network from another. Thus, networks are not so much characterized by their constituting actors but by the way these actors communicate with each other and with the network as a whole. In this respect, communication may be perceived as the way intermediaries are circulated.

By means of intermediaries, actors strive to translate their objectives and intentions to other actors. Translation is a process that is performed by one actor to influence and manipulate the other actor(s). The way this process is organized determines the effectiveness and the efficiency of the network concerned. As a consequence, networks will want to organize ‘the circulation of intermediaries’ (i.e. the process of translation) in an organized and predictable manner. Each actor’s strength depends on the strength of the internal fabric of the network they are part of. Coordination of the circulation of intermediaries is a way to strengthen this fabric. In cases where the interactions between actors are successfully coordinated, the network as a whole provides a firm stronghold for any constituting actor. I argue that the process of translation often is recognizable and predictable in networks. The concept of translation points directly to the (internal) dynamics of an actor network.

The internal dynamics, the translation process, is an interesting angle to look at the emergence of new networks because it accepts the self-creating, self-organizing forces of networks as the starting point for considering network change. According to Callon and Latour (1981: 279), the concept of translation helps us understand “all negotiations, intrigues, calculations, acts of persuasion and violence thanks to which an actor or force takes, or causes to be conferred to itself, authority to speak or act on behalf of another actor or force”. Through translation, actors strive to impose their objectives on other actors and try to incorporate

the powers of other actors into their own acting powers. Networks both facilitate and are constituted on these translation processes. The emergence and formation of networks can be understood by analyzing this translation process. The way the intermediaries are put in circulation, by what actor or force they are issued, at what place in the network they emerge, what they do there, as well as how they are translated and put into further circulation are questions that can clarify the emergence and development of specific networks, for each network will have its own idiosyncratic translation process.

3.3.3

NETWORKS: EMERGENCE, DEVELOPMENT, DECLINE AND STABILITY

As indicated, no networks can exist without actors and no actors are viable without being part of one or more networks. The emergence of new networks is caused by existing networks and actors. And as we have seen, the process of translation is one of the dynamic forces that creates and shapes networks. Perhaps the process of translation can also lead to the emergence of new networks? Bear in mind that in the actor-network theory, non-human actors are explicitly mentioned. This is vital for understanding policy networks that are highly characterized by non-human actors, such as law, financial resources and informational architectures. Changes within actors, changes in translation processes between actors, changes in the character of the intermediaries used and changes in the environment of networks are drivers behind the readjustment of existing networks and the emergence of new ones.

In continuing the idea of emergence, the development of a network must be questioned. How do networks evolve, from new, more or less volatile cooperative structures, to well-known, more or less stable organizational entities?

There are two basic ways for development of networks to go: towards convergence of its actors and towards divergence of its actors. When new actors enter the network, divergence usually takes place. Both network and participating actors have to reposition and readjust to the new situation, i.e. the altered structure and dynamics of the new constellation. When the new actor is successfully absorbed, the network tends to evolve towards convergence. Actors are adjusting the translation process to one another and redesigning the networks intermediaries for effective and efficient communication. Callon (1992: 87) thinks of convergence as a process in which “any one actor’s activity fits easily with those of the other actors, despite their heterogeneity”. Apparently, the degree of successfulness in circulating intermediaries is an indicator of its stability. If the circulation of intermediaries is weakened, it becomes more difficult to keep actors aligned and coordinated. Actors may begin to diverge and are, perhaps, tempted to look beyond the boundaries of the network. The network setting begins to weaken and will ultimately fall apart. The taken-for-granted structure loses its alignment and thus, its integrity.

Disintegration of networks occurs when it becomes easier to ‘reverse its connections’ than to invest in them. The network intermediaries lose their meaning and credibility, the translation process is hindered and, ultimately, comes to an end. This situation of network deterioration is an ideal starting point for the emergence of new networks.

In the previous paragraphs, the development and decline of networks has been described. A yet undescribed stage is stabilization. Networks are, nowadays, broadly accepted as collective structures, as well as structures like groups and organizations (e.g. companies, institutes, multinationals, supranational institutions). Networks tend to supersede these well-known collective structures because it is widely acknowledged that networks can be composed of all kinds of different actors (such as those mentioned above). So, the variegation and the heterogeneity of networks do not hinder their acceptance and credibility as collective or organizational structures through which things can be done. In order to meet these propositions, networks must be reliable and, therefore, must be characterized by a high degree of stability. Stalder (1997²: 14) points to the characteristic of stability accurately: “Networks that are not able to stabilize themselves to a certain degree disappear from the scene, while those which are able to achieve a certain convergence proliferate and become the necessary starting point for any new network”. This stance can be supported to the extent that, in order to be regarded as a network, there must be some kind of stable order. But there is a necessity for declining networks (moving from stable to unstable entities) as a productive basis for the emergence of new networks.

Networks tend to evolve towards stability because this enhances effectiveness and efficiency in the joint actions that are implemented. And more profoundly, without the presence of and embeddedness in a network structure, the actors would not have a meaningful reason to exist. All actors, therefore, are actively contributing to the stabilization of the network because this guarantees their existence for a longer period of time. Coordinated investments in continuity and sustainability will ultimately pay off. Callon (1992: 89) defines stability as “the impossibility to return to a situation in which its current form was only one of many possible options among others”. In other words, actors have no other option than being embedded and immersed in developed networks because they safeguard their continuity. Abandoning a network will immediately cause serious consequences for its survival. An actor can only purposefully turn his/her back on a network when the network loses its function and meaning. But, for its survival, the entrance of another existing network and/or attempt to initiate the emergence of a new one are necessary efforts. In this sense stability tends to lead to predictability and reliability, and to diminishing flexibility. Actors are not entirely free to leave and enter networks at will.

One of the ‘guarantees’ of creating stability is a network’s ability to incorporate as much diversity as possible. The more heterogeneously a network is composed, the more stable it

2 http://felix.openflows.com/html/Network_Theory.html. Retrieved Spring 2004/Revisited February 2009.

will prove to be. With a highly heterogeneous character, it is obvious that the complexity of the network increases accordingly. Thus, complexity adds to greater stability. Because actors have entered into a collection of heterogeneous connections and have become dependent on them, it will be harder to untie or reverse all these connections and destabilize the network. In addition, if the heterogeneity increases, the size of the network will increase, and so will the variety of connections. In order to keep all actors aligned and functioning, additional coordinating actors (think of non-human actors such as rules and information systems) will be developed and deployed. The added, coordinated actors will contribute to the stability of the network. The stability of a network is, therefore, supported by increased heterogeneity and size. This is in line with the perception of current multinational and/or bureaucratic structures that are known for their ability to expand, fragment and maintain themselves at the same time.

To conclude this section on the phenomenon of stabilization within the actor-network theory, a quote by Callon (1992: 92) is most relevant:

A network which stabilizes itself does not only resist competing translations but also restricts the number of possible future translations. This means that in order to establish other links and set up other translations you would first have to undo those which already exist, and change the equivalence in operation, which would in turn mean mobilizing and enrolling new alliances... thus non-linearity and path dependence can be seen to be integral to the dynamics of a network.

3.4

ORGANIZATIONAL NEED FOR HORIZONTAL COOPERATION

Society's transformation into a network structure must have profound consequences for organizations being the most important type of actor 'for getting things done'.

According to Ostrom (1985), modern societies develop complex networks of multi-organizational arrangements to achieve social goals. Castells (2000: 500) argues that the concept of networks leads to new organizational structures in society: "Networks constitute the new social morphology of our society, and the diffusion of networking logic substantially modifies the operation and outcomes in processes of production, experience, power, and culture". He notices that networks, as entities of social organization, have existed for quite some time but became fully materialized after the comprehensive development and deployment of information technology. Castells argues that the mere thinking in network terminology and acting upon it accordingly has a greater influence on human life than what is expressed through these networks. In his view, "the power of flows takes precedence over the flows of power" (Ibid. p. 500). In other words, the presence of social infrastructures – societal

networks – has greater influence on society than what ‘runs through these infrastructures’ – interests and power. It is likely that the presence or absence of specific networks, as well as the competition of networks between each other, largely determines today’s societal dynamics and change. The network society, as such, is characterized by “the pre-eminence of social morphology over social action” (Ibid. p. 500).

Van Dijk (2001) describes four major drivers, at different levels of abstraction, behind the emergence and acceptance of the concept of the network society. First, on an individual level, networking has become an explicit method of establishing interpersonal contacts. Second, on the organizational level, actors have to open up to their environment(s) to live up to commercial competition and/or the increased expectations in public services. By combining and linking internal and external networks, organizations can adjust more adequately to the rapidly changing complex environment(s). Third, and in line with Castells’ observations, networks provide a general reconstruction of society. Networks are the (new) organizational result of overthrowing the existing patterns of organizing in our societies. Moreover, they reflect the search for new levels of scale, new markets and new concepts of governance. Fourth, and again in line with Castells’ observations, the breakthrough of information technology has forcefully stimulated the emergence of networks as a ruling organizational principle.

Castells (2000: 408-409) speaks of “a transition from the space of places to the space of flows” that is taking place in the ongoing evolution from traditional, hierarchical societies to network societies. An interesting question is whether we can recognize a similar transition in organizational life, and thus speak of the space of interactions (‘flows’) instead of the space of organizations (‘places’). In other words, are networks defined by the interactions and connections they represent, more than by the ‘nodes’ (actors) they connect? The character of the network is not defined by the connected nodes but by the connections themselves. As a consequence, network organizations are perhaps more defined by the networks they relate to than by the objectives they pursue. One of the main consequences of the network nature of today’s society for organizations is the development of horizontal cooperation (Frissen, 1999; Castells, 2000; Klijn, 2002; Börzel, 1997) for achieving their (societal) objectives.

Establishing the required connections and thus creating an inter-organizational fabric presupposes the capacity for horizontal coordination. The capacity of horizontal coordination is an important condition for the survival of organizations. Being able to establish and maintain connections to larger inter-organizational fabrics becomes a vital skill for organizational survival. Horizontal cooperation in society results in the emergence of both business and policy networks (Castells, 2000; Powell, 1990). Horizontal cooperation in the public domain can be captured by the concept of policy networks (Börzel, 1997; Teisman, 1992; Benson, 1982). Since this thesis is aimed at the public domain, only horizontal cooperation through policy networks is discussed in detail in the next paragraph.

3.5

HORIZONTAL COORDINATION IN THE PUBLIC POLICY DOMAIN: POLICY NETWORKS, POLICY NETWORK DYNAMICS AND POLICY NETWORK MANAGEMENT

The broadly accepted assumption is that we live in a network society. Organizations adapt to it by transforming themselves into network organizations. There has been an extensive search for answers to the question of how to manage or even control these networks. This question is valid for both public policy and private actors but because of this thesis' focus, the consequences are solely elaborated for public administration, i.e. for policy networks. In the paragraph on the actor-network theory, an attempt was made to describe the inseparability of actor and network, which are both concepts for understanding and analyzing social dynamics. In this section the following subjects are discussed. First, I will look into various definitions of the concept of policy networks. Second, the dynamics of policy networks are addressed by discussing the interactions that take place by means of policy games. Third, the governance of these dynamics is discussed by elaborating upon the concept of policy network management. Fourth, and last, the relevance of policy networks as a social environment for learning is addressed.

3.5.1

THE CONCEPT OF POLICY NETWORKS

Based on Börzel (1997) and Mayntz (1993), we can safely argue that policy networks tend to reflect a changed relationship between state and society. There no longer seems to be a stringent division between the two. Instead of emanating from a central authority, policies are in fact constructed through processes that involve a plurality of both public and private actors. In this respect, the concept of policy networks signals a real change in the structure of governance (cf. Mayntz, 1993). Ostrom (1985: 14) argues that

[all] western democracies have resources to systems of governance that always imply multi-organizational arrangements. Something called the government of the state is either a misnomer or is being used as a proper name to identify some particular entity in a more complex configuration of rulership that exists in such societies.

Various other authors have attempted to define this changed relationship between state and society and its consequences for the policy process. In the following paragraphs, a collection of definitions is provided. Börzel (1997: 1) offers the following definition: "a set of relatively stable relationships which are of a non-hierarchical and interdependent nature linking a variety of actors, who share common interests with regard to a policy and who exchange resources to pursue these shared interests acknowledging that cooperation is the best way to

achieve common goals". Benson (1982: 148) regards a policy network as "a cluster or complex of organizations connected to each other by resource dependencies and distinguished from other clusters or complexes by breaks in the structure of resource dependencies". Wilks and Wright (1987: 297) consider policy networks to be "a linking process, the outcome of those exchanges, within a policy community, or between a number of policy communities". In their view, a policy community is "a more disaggregated system involving those actors and potential actors who share an interest in a particular industry and who interact with one another, exchanging resources in order to balance and optimize their mutual relationships" (Ibid.).

According to Marin and Mayntz (1991: 11-23) policy networks refer to "the collective action of organized, corporate actors, and consequently to inter-organizational relations in public policy making". Klijn et al. (2000: 13) suggest the following definition: "a complete set of relationships between interdependent actors who group themselves around a certain policy problem or policy program". According to Teisman (1992: 49), a policy field develops towards a network structure when "actors cannot deny each other and as a consequence establish complex patterns of interactions". Klijn and Teisman's definition (1992: 32-51) perhaps points most accurately to the volatility and fluidity of today's network society when they refer to policy networks as "changing patterns of relations between interdependent actors that group themselves around policy problems or clusters of resources and that are shaped, maintained and changed by a series of decision-making games".

From these definitions, it can be derived that several authors identify the same key idiosyncrasies of policy networks: actors, resources, collaborative actions and relationships (Klijn et al., 2000; Teisman, 1992; Börzel, 1997; Kenis & Schneider, 1991; Mayntz, 1993). Policy networks are composed of and initiated and maintained by actors. These actors are all involved in the public policy process, in the sense that they are responsible for its outcome, for its organization and procedural design and the attribution and dispersion of policy objectives and resources. This responsibility leads to interdependency among the networking actors

Interdependency is an idiosyncratic feature of policy networks. In pursuing their responsibilities for substantial and procedural components of the policy process, actors will have to engage in mutual relationships with one another. These relationships are necessary because of the network character of today's society, which exceeds the span of control and influence for individual policy actors. The interdependency of the actors involved points to yet another specific feature of policy networks: the establishment of relationships of interaction and interdependency.

3.5.2

POLICY NETWORK DYNAMICS: DECISION-MAKING AS POLICY GAMES

Klijn's and Teisman's definitions for policy networks helps us to come to grips with the specific dynamics within policy networks. These dynamics are characterized by the metaphor 'policy games'. Policy games are driven by the interdependency of actors in a policy network. Actors need each other for support, resources, or at least from abstaining opposition in order to attain their objectives, certainly when these objectives surpass the direct span of control and influence of those actors. In today's network society that is often the case. Klijn et al. (2000: 16) characterize policy games as a "series of interactions between actors aimed at influencing problem definitions, solutions and methods to be applied". Thus, policy games emerge when actors realize they need other actors for the attainment of their objectives. As a consequence, actors deploy strategies in order to influence other actors, as well as the interaction process itself (in the actor-network theory defined as translation, cf. Callon & Latour, 1981).

In contrast to Klijn et al. (2000), I argue that these strategies must be essentially cooperative, or maybe I should say ultimately cooperative. Klijn et al. argue that uncooperative strategies can be successfully deployed to attain (ambitious) objectives in a policy network. But in my view, and in line with the actor-network theory, actors are so tied up in a network structure they cannot afford to not play along. Negating or neglecting the necessity for cooperation will ultimately endanger the actor's existence. Therefore, I argue that an uncooperative strategy will only be used as an intermediary stage in a basically cooperative process. It is my proposition that 'negative behavior' will ultimately be dissolved and replaced by cooperative. The network as a whole will not accept deadlocks that persist over a longer period of time, endangering its coherence, self-coordination and very existence. Networks are self-organizing and self-creating systems aimed at survival and expansion and, in that sense, they do not differ from organizations.

The dynamics in policy networks evolve like a game. There are several rounds (cf. Teisman, 1992; Klijn et al., 2000) in which the result of the policy process – a decision – is shaped, changed, reviewed and agreed upon. Within these rounds, complex interaction patterns emerge in which actors try to clarify the problematic situation they are in and negotiate how to resolve the situation (cf. March & Olson, 1976; Koppenjan, 1993). It is obvious that, with regard to complex societal problems, this process is not without deadlocks and conflicts, e.g. arising from the intermediary uncooperative stages in the policy gaming process. Actors will want to try this as efficiently as possible.

3.5.3

POLICY NETWORK MANAGEMENT

Based on Klijn et al. (2000), the idea of network management can be introduced by posing a question for which an answer is expected: “Which actors in a policy network context should participate in what way and for what reasons in a strategic policymaking process”?

Various authors have theorized about the question of how to manage policy networks and their dynamics; see e.g. De Bruijn, Ten Heuvelhof and In ’t Veld (2002) on the concept of process management, and De Bruijn and Ten Heuvelhof (1995) on the idea of network governance. De Bruijn et al. (2002: 53-56) propose a set of principles to design and implement policy network process management. The proposed principles are subdivided into openness, security³, progress and substance, all of which are discussed below.

The principle of openness is achieved when all relevant actors are involved in the decision-making process. This is necessary to avoid possible obstruction by missing actors and to include valuable knowledge and information. Second, substance becomes process in the sense that no substantial choices have been made prior to the start of the process. There is only room to indicate the foreseeable moments of choice and the way these will be executed. Third, the network process and its process management are characterized by transparency and openness. This seems rather self-evident but it is of great importance to explicitly communicate to the actors the stages in the process planning, the way their interests are secured, what the decision-making rules will be, who the other actors are and what they represent.

Although openness may be one of the principles for process management in networks, this does not imply that networks themselves are always open to anyone. Skvoretz and Willer (1993) refer to exclusion strategies in networks that represent a source of power. According to them, the potential for initiating exclusion is associated with a certain position in the network that can preclude exchanges by actors at other positions in that network. In terms of the actor-network theory, we could claim that actors who control the translation game, control the network by determining the other actors’ exchange capacities. This means that actors are engaged in a continuous analysis of their position in the network. They must develop a dynamic awareness of their potential for voluntary exiting or for coping with pending exclusion from the network (cf. Skvoretz and Willer, 1993).

The security principle in the process for each of the actors involved is accommodated as follows. Initially, commitments can be (temporarily) postponed by the actors, in the sense that the extra time creates maneuvering room for each actor to influence the process and its outcomes. Actors must have the assurance that points of no return do not emerge unexpectedly and that they are not forced to comply with previously fixed outcomes decided upon by other actors. In reference to this, actors must feel assured that they are not forced into

3 In the sense of a safe and sheltered environment.

behaviors that violate their key interests. This assurance can be achieved by agreeing that certain essential decisions can be blocked by a substantial minority or by allowing actors to formulate dissenting opinions. The process itself has exit rules: actors can continuously evaluate their participation in the process and decide on abandoning or prolonging their involvement. The process acknowledges soft coupling (non-linear) between partial, intermediary and comprehensive, final decisions. If there is no slack between previous and final decisions because there is a linear, non-avoidable coupling between the two, actors will be likely to discuss each detail of each partial, intermediary decision because it will directly and inevitably affect their future policy actions. As a consequence, in the process, risks will be avoided and reflection on one's own positions and viewpoints will not take place (cf. Senge, 1992), leading to non-innovative and 'safe' results.

The principle of progress in policy network processes is of great concern to the actors involved. Maintaining progress and focus in complex processes is often the ultimate challenge for process management in networks. De Bruijn et al. (2002: 60-63) suggest five principles to address this challenge. First, the process should generate benefits and incentives for cooperative behavior, especially for finishing the process. As long as actors are convinced that participation is (still) more beneficial than abandoning it, they will want to contribute. Second, the process should include top-level representatives of the participating actors. This stimulates the external authority and prestige of the process as well as the power to make decisions and implement them internally. As a consequence, the process manager actively stimulates and invests in the external authority and prestige of the process itself, in order to be able to withstand emerging internal and external pressures (and the exhaustion that comes from them) because of these often time-consuming activities.

Third, process management makes active use of the external environment of the process. The environment is composed of non-participating actors that have a somewhat remote interest in the process, for example the general public or the press. These actors are, however, capable of influencing the process. Process management can use this influence to speed up or slow down the process. Fourth, process management uses the finiteness of the process to stimulate its progress. The mere essence of policy processes is often perceived as achieving certain objectives, with the aid of various resources, within a given timeframe (cf. Hoogerwerf, 1989). Thus, all actors involved are tuned in to knowing that a process will end at some point, mostly by making a decision; policy is the result of a decision (cf. Teisman, 1992). Policy processes take place in a historic context and will be followed by future processes. Actors know this and, subsequently, are sensitive to the concept of deadlines and milestones in any given policy process situation. Using this concept can help to keep processes on track.

Fifth, emerging conflicts are addressed at the lowest level of abstraction⁴. Policy processes tend to have a multi-layered structure: various levels of authority and power within participating actors gather together in working/project groups, steering groups, expert panels and consultation groups. In the case of arising conflicts, De Bruijn et al. suggest that they can best be addressed at the level where substantive matters⁵ are discussed, e.g. in the working or project groups. These groups usually prepare the decisions that will have to be made by the steering group, for example.

Important conflicts have to be resolved before the decision-making stage. Moreover, decisions and conflicts of a procedural nature are usually addressed at high organizational levels. But, if we revert to a previous principle (i.e. substance becomes process), we might claim that there is a contradiction, or at least a contrast, with the principle of openness. This principle seems only valuable when the projected multiple layers are accepted and have materialized, the conflict has a substantive and not a procedural origin and will be resolved. What to do in other situations is not revealed by De Bruijn et al. (2002) as they do not offer assistance for dealing with procedural conflicts, such as claiming other rules of engagement, changing needs for openness and security, declining internal support, diminishing external credibility and diverging perspectives on expected outcomes.

The principle of substance in the network process is addressed as follows. First, substantive insights are used in a facilitating fashion. According to De Bruijn et al., substance cannot determine the policy process because the problematic situation at hand cannot be solved by using existing objective knowledge, which, therefore, made a procedural approach inevitable. For productive use of substantive knowledge, the roles of experts and stakeholders are first separated and then interwoven. This must do justice to the use of partisan and non-partisan, content-oriented knowledge. Stakeholders are likely to use 'colored' substantive knowledge to support their specific interests, whereas experts are expected to use knowledge impartially. In this manner, partisan and non-partisan knowledge can be productively coupled, creating a more balanced, yet still recognizable body of knowledge.

Second, the process should develop from wide variety of substantive information towards selection. The process starts with collecting and accommodating as much variety (of significant information) as possible. Gradually, this body of knowledge will be sifted through and clustered, by discussions between actors, and with aid of impartial experts. Ultimately, from the remaining information a selection will be made in a collaborative manner, in order to achieve a jointly-accepted problem definition and accompanying solutions. Mind you: this looks like a somewhat procedural approach to analytical-rational policy-making

4 De Bruijn et al. speak of 'putting conflicts as deep as possible in the process'.

5 For example, the accuracy of information, the feasibility of proposed objectives and solutions, the acceptability of interests.

which evolves along somewhat instrumental guidelines for managing networks. I deliberately call these guidelines ‘instrumental’ because they promise some kind of predictable network behavior. This predictability is in my opinion fairly low, if not absent, because of the ever-expanding network complexity (see Section 3.2 about the characteristics of the network society). Moreover, it bears the illusion that one or a limited number of actors are able to steer the network in the desired direction. This means that this or these actor(s) can be considered separately from the network as a whole. I argue that this does not do justice to the characteristics of the network society and to the concept of embeddedness, which is discussed by means of the actor-network theory. This theory is one step down from discussing networks from a relativist/pragmatist perspective, the philosophical perspective that frames this thesis.

3.5.4

PUTTING NETWORK MANAGEMENT IN PERSPECTIVE

In light of the previous paragraphs, one can understand that there tends to remain some kind of modernistic illusion of being able to predict and estimate what the outcome of network management efforts will be and how policy games will develop. This observation calls for a reflection on the positive and negative aspects of the described concept of policy network management. With regard to the positive aspects, the following remarks can be made. First of all, there is a procedural emphasis that does justice to the need for active involvement by the policy actors. Network management is not about setting instructions and rules and expecting that the aligned actors will behave accordingly. On the contrary, continuous involvement, monitoring and navigation are required to at least have a chance of influencing network dynamics. As a consequence, the need for joint effort is stressed. Network management acknowledges the contingent and circumstantial character of network-based policy processes. In addition, there is prominent attention to network artefacts and their more-or-less institutional nature. Because of its inevitability for the actor’s existence, network participation becomes institutionalized in the interactions between actor and network. The institutionalization of these interactions is expressed through ‘non-human actors’ or artefacts such as rules, conventions and (physical) infrastructures. Lastly, network management approaches are comprehensive and exhaustive because all stages of the policy process are incorporated. The enrichment of problem definitions, possible solutions and knowledge, for example, are considered to be central drivers behind networking and cooperation.

Besides these positive remarks on the concept of network management, there are severe limitations as well. First, there is the illusion of ‘linear governance’ in the sense that it is possible to conduct predictable, effective and stable processes. This leads to a prescriptive stance: ‘do this and that, avoid such and so, and everything will turn out as predicted’. Almost no attention is paid to incidents, public opinion and political behavior that delineate policy pro-

cesses. And then, there is the assumption of the need for some kind of governing actor that hovers above the process, managing it towards a qualitatively sound outcome. The emphasis is on the possibility of reaching favorable and effective outcomes for all actors involved. Hardly any attention is paid to the question of how to deal with unfavorable, ineffective outcomes. Finally, there is some kind of elusive volunteerism, in the sense that each actor would be free to decide whether they want to participate in networks or not and in what network. But network participation is vital for the actor's existence, purpose and survival. Thus, actors cannot enter and leave networks at will. They are tied to specific inter-organizational fabrics just to survive. The positivist illusions about networks and network management are further examined and challenged in the next section.

3.6

THEORETICAL INTERLUDE: A RELATIVIST/ PRAGMATIST INQUIRY INTO NETWORKS

The main reason for trying to avoid, or at least identify, potential pitfalls of modernistic views on policy network management is grounded in my conviction that it is fruitless to uphold the positivist illusion of designing and implementing goal-oriented management in a postmodern and continuously post-modernizing societal environment. The consequences of the network(ed) environment for governance are expressed in the question of how to deal with these changed and ever-changing circumstances. The mere acknowledgment of the network concept, accepting its characteristics as a starting point for public administration and trying to materialize them into new approaches for governance, is enough reason for accepting a relativist/pragmatist's premises. I will elaborate on this proposition in the relativist/pragmatist interlude by discussing the concepts of contingency and fragmentation (Frissen, 1999). I will add the concepts of embeddedness and interdependency because of their relation to the actor-network theory. Further, embeddedness has strong connections with the concept of learning that will be addressed in Chapter 6, also from the relativist/pragmatist perspective.

3.6.1

CONTINGENCY

The emergence of networks is based on the ever-changing circumstances caused by societal and technological developments to which organizational structures have to adjust in order to remain functional and meaningful. If circumstances were relatively stable and/or only changed along expected lines without significant changes and incidents, then networks would not be so ubiquitous, simply because well-known hierarchical structures would be adequate to get things done in our society. But the ever-changing circumstances lead

to extensive dynamics in society, to which formal organizational structures cannot adjust quickly or accurately enough. The specific circumstances that lead to the formation of a network result in network-specific rules, routines, language, perceptions and ways of conduct. Actors are part of different networks and, thus, are compelled to master different kinds of rules, routines, languages, perceptions and ways of conduct and, at the same time, be able to function effectively in different social environments. As a result, contingency rules.

The specific circumstances that surround a particular network lead to idiosyncratic rules, routines, languages, perceptions and ways of conduct which, in turn, form their own internal dynamics, developing and shaping the network as it evolves. The nature of societal networks can be captured in terms like self-creating, self-organizing and self-perpetuating (as shown in Section 3.3). The translation process is an interesting angle to use to look at the emergence of new networks because it accepts the self-creating, self-organizing forces of networks as the starting point for considering network change. According to Callon and Latour (1981: 279), the concept of translation helps us understand that “all negotiations, intrigues, calculations, acts of persuasion and violence thanks to which an actor or force takes [...] authority to speak or act on behalf of another actor or force”.

In this respect, contingency seems almost unavoidable. A traditional, modernistic reaction to contingency and its consequences for public administration is the vigorous attempt for total control. Willke (1992) recognizes this attempt and tries to give it a post-modernistic twist. He advocates that contingency should be controlled by regarding it as both a basic principle and a desired result. Thus, in his view, control does not imply reducing and/or stabilizing contingency, in an attempt to try to return to business as usual. Instead of aiming at fixed results, the outcomes of governance processes are unpredictable, accidental and volatile. However, Frissen (1999: 211) points to a potential flaw in Willke’s suggestion: its functionalistic orientation which, after all, can lead again to the modernistic illusion of being able to manage contingency. To avoid this pitfall, Frissen (Ibid.) suggests accepting Rorty’s concept of contingency (1989). Rorty claims that there is no way of superseding or replacing the entities language, selfhood and community we have to deal with by introducing a new meta-entity that meaningfully comprises all other entities. This claim induces us to move away from believing in or striving for anything that pretends to be true and/or to has an intrinsic nature. It is clear that this concept is not aimed at getting a grasp on contingency but merely advocates for an awareness that language, consciousness and community are contingent. The pursuit of connections and involvement, both crucial for being able to function and survive in networks, will then always be accompanied by an awareness of their accidental nature (Rorty, 1989). Frissen (1999; 2007) then elaborates on this idea by claiming that variety and chance should be the anchor for public administration and governance. Desires to coordinate and integrate all administrative efforts are bound to be futile and counter-productive. The abandonment of total control opens up new opportunities for administrative actions, by productive use of variety instead of trying to reduce or destroy it. The regulation

and organization of contingent patterns, that is, infrastructures and processes, can only take place by those patterns themselves and cannot be forced on them without damaging them. And, in turn, regulation and organization themselves will be contingent.

3.6.2

FRAGMENTATION

The increased and increasing disorganization in our society are the result of technological and (socio-)economic entities, earlier described based on Castells (2000), and of what Beck, Giddens and Lash (1994) call “reflexive modernization”. According to Frissen (1999: 179) their concept of reflexive modernization refers to “the premises of modernity [that] end up in a tangle of unintended consequences, through which modernity gets to contradict itself”. Modernization has advanced into such a detailed and complex structure (laws, rules, funding, organizations, prescriptions, calculations, accounting, models, etc.) that it can no longer be controlled or overlooked. Lash (1994) thinks that the grand narratives which are the vehicle of modernity no longer apply because they cannot help us to understand the rising, self-created and self-perpetuating complexities. Instead “small narratives” (Frissen, 1999: 264-265) rooted in communities are more appropriate because they are (still) able to communicate “shared meanings”.

Frissen (1999: 180) suggests using the term ‘fragmentation’ to address the situation of degenerated modernization: “Fragmentation is a radicalization of, and in opposition to, differentiation as the dominant characteristic of the modernization process”. In Frissen’s view, fragmentation is not the next stage in the modernization process and has nothing to do with progress, enlightenment, emancipation or other ‘totalizing’ concepts. Continuing differentiation undermines the linearity of modernization and materializes in ubiquitous contingency. He (Ibid. p. 180) argues that “it is precisely that contingency which is expressed in the term fragmentation because it indicates both the accidental nature of social developments and the emergence of new connections”.

It is clear that fragmentation applies adequately to the network concept. The character of the network is not defined by the connected nodes but by the connections themselves. The development, direction, decline and deterioration of the connectors is the driving force of network dynamic. The reasons for certain developments, directions and the deterioration of connections are not deliberate, coordinated or managed, nor can they be predicted in a convincing and meaningful manner. Chaos and disorder seem to have become organizational guidelines. As a consequence, disorganization may be accepted as the organizational characteristic of networks. This is perhaps most convincingly identified by the characterization of societal and organizational networks as rhizomes (cf. Deleuze & Guattari, 1977): “the rhizome grows in all directions, has no centre and no linearity” (Frissen, 1999: 182). Its separate components are exchangeable and are defined by “a temporary state of affairs, local operations coordinate themselves and general finality is independent from central

synchronization” (Deleuze & Guattari, 1977: 28). This disorganized structure of society is represented by non-linearity in processes, non-hierarchical and instable structures and an increasing sense of non-predictability and non-reliability. As a consequence, the rhizome can be used for describing a contingent pattern of organization within the network concept. The rhizome concept refers to the expansive, rampant growth of (public) initiatives that are put in place to manage (societal) problems. The rationality behind these initiatives, as well as their focus and coordination often remain concealed. Although such initiatives are often launched by political consent, after a while, they often assume a life of its own, with a tendency to lose their connection to the reason behind their existence. These (public) initiatives are there because they were once initiated. They have developed their own rationale and practices⁶. Frissen (1999: 180) continues with the observation that “those connections are the fragments which derive their meaning, not from any grand narrative but from local practices”. These practices are rooted in local, personalized communities that are increasingly network-shaped. Many small stories are being told, without a scenario, without direction and without much internal coherence, but with great power to compose and convey shared meanings.

3.6.3

INTERDEPENDENCE AND EMBEDDEDNESS

Contingency and fragmentation lead to interdependency. Interdependency is often referred to as ‘everything is related to everything’. This phrase pinpoints the importance of connections as the distinctive feature of networks in general and the idiosyncratic effect they have on specific types of networks. Interdependency emerges through the creation and maintenance of connections as the key objective of network activity. As a consequence, being able to connect is vital to organizational survival in networks. Moreover, the inability of one actor governing an entire network (i.e. controlling all network connections) is perhaps most convincingly illustrated by the actor-network theory’s premise of constitutive nature of both actor and network and Granovetter’s (1985) concept of embeddedness. Embeddedness refers to the inseparable relationship between an individual and its social environment. Bredo (1994: 4) refers to embeddedness as follows:

Rather than a person being ‘in’ an environment, the activities of person and environment are viewed as parts of a mutually constructed whole; put simply, the inside/outside relationship between person and environment is replaced by a part/whole relationship.

6 An example is the vast amount of innovation programs in the physical-spatial science-policy domain (see also Section 4.8.2). I often wonder what their rationale and focus is, and how their efforts and progress are coordinated.

In the actor-network theory, the idea of embeddedness refers to understanding and analyzing the indeterminacy and interdependency between societal and technological development. The inseparability of actor and network, of part and whole, can be transferred to getting things done in the public domain, through policy and governance. Actors are embedded in a social structure (i.e. networks) that is a necessary condition for their existence and purpose. In turn, without actors and their interdependencies (i.e. connections, intermediaries), no networks would exist. The actor-network theory points to the constitutive nature of both actor and network for each other's existence and presupposes network stability. However, stability tends to contradict the concepts of contingency, disorganization and fragmentation. It is self-evident that (policy) networks strive towards stability and predictability. And the actor-network theory suggests that networks succeed in achieving this.

But, I argue that even if this stability and predictability in networks emerges, it will only have a temporary, and thus an ironic, nature. Today's (global) networks are so complex and comprehensive that it is only a matter of time before internal or external dynamics cause one or more actors to react, undermining the established "stable state" (cf. Schön, 1973) of affairs, thus changing the characteristics of the network. The reaction of one or more actors leads to the internal dynamic of translation, which is perceived as one of the key drivers behind the continuous readjustment of actors to one another. The continuous need for adjustment and coordination within networks puts the need for stability in a relativist perspective. So, if there is a stable characteristic of networks, I argue that it would be its ever-changing, contingent nature.

3.7

THE NETWORK CONCEPT IN RELATION TO GOVERNANCE AND POLICY ANALYSIS

The question arises of how we should deal with governance in a society that is characterized by contingency, fragmentation and interdependence. I argue that an attempt at this is possible by using the concept of connections for shaping governance in a network society. With Castells' remark about the growing importance of flows over places and the concept of translation from the actor-network theory in mind, it is inevitable that the ability to create, design and sustain connections is essential for any approach of governance in a network environment. Connections are the most important part of networks. Without connections, no networks.

The capability of governing connections is perhaps most insightfully offered by Frissen (1999: 228), as he speaks of "steering at the edges" when referring to the need to "favour variety, fragmentation and interdependencies instead of trying to reduce them". Frissen proposes some form of meta-governance as a alternative approach, which does greater justice to

the network conditions we find ourselves in (such as economic, social and cultural fragmentation, autonomy of lifestyles, practices and domains) than the existing forms of governance. Public administration must no longer be substantive or content-oriented but must evolve towards process-orientation. Frissen seems to advocate a type of steering that pursues procedural rather than substantive goals. Thus, governance should be concerned with guaranteeing the existence of certain social domains instead of trying to influence or even control what is going on in these domains. In this respect, governance should focus on infrastructures and the process of decision-making and image creation. In doing so, governance can help to strengthen the network fabric in and around these social domains.

Frissen refers to Bekkers for a useful terminology for this challenge. Bekkers (1993: 98-110) speaks of governance that is “directed at the boundaries of organizations, and steering of the mutual dependencies between organizations”. Steering at interdependencies is especially attractive for dealing with issues of governance in network environments. After all, interdependency is the key expression of network structures. Steering at interdependencies accepts the autonomy and fragmentation of social domains as the starting point for governance. The conditions necessary for the emergence and functioning of connections between the social domains are the point of application. If an actor is capable of influencing or even determining these conditions, network governance can be successful.

Network governance, however, should be deployed for procedural objectives and not for bringing in their substantive, content-oriented interests. Or, as Frissen (1999: 229) puts it:

It is concerned with facilitating and establishing patterns of communication, image-creation, negotiation, discussion, consultation and decision-making. The interest which becomes defined is that of interdependencies as such, or in other words, the interest of connections.

As a consequence, public administration should solely govern by the infrastructures and processes which make the required connections possible and effective. Moving away from content-oriented governance in favor of a procedural approach is the first step; establishing the desired infrastructures and processes is the next. If the network emanated from and is characterized by fragmentation, contingency and chance, then its governing infrastructures and processes must be at least sensitive to these characteristics. Frissen does not offer a straightforward prescription for the design and execution of the infrastructures and processes, thus avoiding the often overlooked pitfall of offering a (or *the*) methodological approach for this. He (Ibid, p.229) does, however, offer some thoughts for the (joint) design of these infrastructures and processes which I have paraphrased as follows:

- The value of plurality is acknowledged by leaving the autonomy of the fragments and the domains which constitute this plurality untouched;
- The intended connections must be horizontal instead of hierarchical;

- The focus is on fragments and connections which become visible on the edges of social domains. As indicated earlier, governance does not intervene in those fragments and connections themselves but attempts to create, stimulate and act upon the conditions that constitute them.

An interesting question is whether the construction of the intended infrastructures is an intentional, deliberate activity or more a matter of making productive use of contingency? Based on Frissen (1999: 229), we must conclude that the latter is most likely to be the case here:

Steering moves to the bottom of society, to the conditions needed for autonomy, fragmentation and connection, taking up a relativist position and honouring contingency. Steering is once again directed at infrastructures and at the social dimensions along which communication, image-creation and transactions take place. Such a conclusion is almost pre-modern.

Consequently, governance becomes a horizontal activity rather than a hierarchical effort. This consequence has important implications for processes of policy analysis, innovation and learning in a policy network environment, because they will become 'horizontal' themselves, following up on the contingencies in the networks in which they emerge.

As indicated above, the concept of policy network management in today's whimsical, highly volatile society has severe limitations. It creates an illusion that it is possible to steer and govern network policy processes in a desired direction, let alone towards expected and favorable outcomes. In my opinion the limitations for policy network management must inevitably result in a different approach to governance. As a consequence alternative approaches, such as proposed by Fischer and Forester (1993) and Hoppe and Peterse (1998), advocate replacing the modernistic, instrumentalist and representative ways of governing society, by more argumentative, deliberative (Hajer & Wagenaar, 2003) and accidental forms. Government is no longer the key player in managing societal developments. Society is no longer a one dimensional and stable environment in which cause and effect are neatly organized and outcomes of governance efforts are highly predictable. This idea is based on Donald Schön's (1973: 28) advocacy for a learning approach that organizations and individuals should learn to master in order to deal with the societal dynamics that go beyond the stable state:

The loss of the stable state means that our society and all of its institutions are in *continuous* processes of transformation. We cannot expect new stable states that will endure for our own lifetimes. We must learn to understand, guide, influence and manage these transformations. We must make the capacity for undertaking them integral to ourselves and to our institutions. We must, in other words, become adept at learning. We must become able not only to

transform our institutions, in response to changing situations and requirements; we must invent and develop institutions which are ‘learning systems’, that is to say, systems capable of bringing about their own continuing transformation.

This means that the well-known distinctions between reality and fiction, public and private domains and time and space, are no longer viable. Hajer and Wagenaar (2003) advocate the development of deliberative, participatory processes of policy analysis that are (supposed to be) capable of supporting ‘governance in the network society’. The emergence and development of participatory policy analysis is further elaborated in Chapter 4.

3.8

THE NETWORK CONCEPT IN RELATION TO LEARNING IN PARTICIPATORY POLICY PROCESSES

The question is how we can relate the procedural, horizontal approach to network governance to the concept of learning. I will elaborate on that in the next section.

An elegant and, for this thesis, useful way of dealing with policy network management, or network governance, is proposed by Klijn et al. (2000: 31). They consider the policy games in networks as essentially “goal-seeking processes in which actors are learning by doing in working together towards joint solutions”. They argue that if we regard policy games as search processes in which initial uncertainties and contradictions are reduced and resolved by interaction⁷, it is acceptable that the quality of these processes depends on the extent to which learning behaviors have emerged. To characterize this specific type of learning, Klijn et al. refer to the advocacy coalition theory of Sabatier and Jenkins-Smith (1993). In this theory, learning is perceived as taking place between actors, across the boundaries of organizations and coalitions. Based on this theory, Klijn et al. (2000: 31) consider learning in policy networks as “the sustainable increase in knowledge, insights and methods, shared by the actors involved”. As a consequence, they distinguish cognitive, strategic and institutional learning and use this distinction for implementing policy network management.

Klijn et al.’s (Ibid, p. 31-33) perception of network management is aimed at trying to stimulate and guide three types of learning: cognitive, strategic and institutional. Cognitive learning is perceived as the increased knowledge and insights with regard to the nature, causes and effects of a problematic situation, its possible solutions and their consequences and interconnections. They attribute the following characteristics to cognitive learning. Cognitive

7 It must be noted here that the reduction or resolution of uncertainties and contradictions is an act of negotiation that transpires in interaction processes.

learning is envisaged in the refinement of the problem definition and in the solutions that the actors involved agree upon. These solutions should do justice to the various interests and objectives that are represented by the stakeholders involved. Moreover, cognitive learning should be tangible in enriched, innovative solutions that succeed in both interweaving various objectives and reducing or compensating (policy) costs. Besides, in the (enhanced) substantive quality of the policy solutions, this type of learning can be recognized by the degree of satisfaction and support that the actors have for the formulated solutions.

Strategic learning is defined by the increasing awareness of the actors to their mutual involvement and interdependencies. Strategic learning is (a type of) social learning which is reflected in the strategic capacity to deal with conflicts of interests in which cooperation alternates with struggle. Ultimately, strategic learning involves an actor's capacity to adequately participate in mutual negotiating processes – in search of acceptable problem definitions and solutions – that are adjusted to their own objectives as well as to the objectives of other relevant actors. Similar to cognitive learning, successful strategic learning becomes manifest in satisfactory policy outcomes. But strategic learning is also measured by the quality of the process itself that has led to satisfactory policy outcomes. According to Klijn et al. (2000), the strategic quality of the process depends on several factors, such as its accessibility to relevant actors, the (perceived) reliability of the actors involved, the availability of formal procedures of appeal and democratic forums, limited transaction costs, and (independent) facilitation of the process.

Institutional learning comprises the development of new relationships, rules, perceptions, and vocabularies that support and facilitate the *ad hoc* interactions between the actors involved. Institutional learning thus provides a solid and sustainable foundation for acting in a policy network environment. Institutional relationships express the acknowledgement of sustainable, mutual dependencies. They have a facilitating and mitigating impact on interactions regarding tangible policy problems and solutions. Institutional learning becomes apparent in network emergence, formation, stabilization and change, and involves a longer period of time to develop than cognitive and strategic learning. Also, the impact of strategic learning has a long-term scale: the developed relations, rules, perceptions and language are not likely to be changed easily by one of the actors individually. These network artefacts are often supported and/or replaced by more or less formal arrangements, such as new organizations, laws and jurisdiction, and regular consultation rounds.

In the previous chapter I argued that action science is capable of enhancing a community's capacity to learn (cf. Argyris et al., 1985). Most communities in public policy networks will experience a need for learning on all three levels mentioned above. To be productive, action science must be capable of producing knowledge that can inform multiple forms of action, that is cognitive, strategic, and institutional learning. This multiple learning effort can be organized through reflection on cognitive, strategic, and institutional challenges the

community of practitioners is engaged in. Community members can engage in collaborative reflection on cognitive challenges with regard to the problem definition and potential solutions. They can engage in strategic reflection on what collaborative objectives to pursue and with whom (network partners) and how (network relations) these objectives may be reached. This strategic reflection may be (partially) implemented together with these network partners. And lastly, community members may execute institutional reflection on what new relationships, rules, perceptions, and vocabularies are needed to realize their collaboratively conceived objectives. This institutional reflection may be enhanced through the involvement of network actors who are representatives of institutional arrangements, such as legislators and politicians.

It is obvious that these types of reflections are interdependent. The outcomes of one type of reflection will inevitably trigger the need for another type. Conducting all three types of reflections simultaneously is an extremely complex task for both community members and researcher. I think that in action-science practice these types of reflections, aimed at informing specific types of action for changing network dynamics, may be valuable for deciding what type of reflection is needed (first), and for assessing retrospectively the outcomes of reflection, that is action-oriented knowledge.

3.9

CLOSING REMARKS: NETWORK CONSEQUENCES FOR PUBLIC POLICY ANALYSIS AND INNOVATION, INNOVATION PRACTICE AND LEARNING

In this chapter the emergence of the network society and its consequences for governance are discussed. The ‘networkification’ of our societal context leads to an ongoing and deeply rooted contingency and fragmentation of problems and demands. In addition, the growing interdependency of actors on one another will enhance the awareness of being embedded in a larger entity. The discussed network characteristics will have consequences for policy analysis and innovation in the public policy domain and for learning processes that follow from these activities. These consequences will be discussed in the chapters 4 and 6.

In Chapter 4 the consequences of the network society and the subsequently shaped public domain for policy analysis and innovation will be discussed. As one can imagine, continuous networking tendencies will have inescapable consequences for the knowledge landscape, the distribution of resources and interests, and the inducement of and opportunities for participation in practices and activities of policy analysis, including public policy innovation.

Chapter 6 addresses the concept of learning that is driven by public policy analysis and innovation in the public domain. As indicated, Klijn et al. (2000) argue that policy network management is more or less equal to facilitating cognitive, strategic and institutional learning processes between actors in policy networks. However, as one can imagine, these strategies may also suffer from modernism. The learning approach to network management is valuable because it puts network dynamics at the heart of network governance, following the self-creating and self-organizing power of networks. In this respect, learning can be perceived as a metaphor for 'steering at the edges' (cf. Frissen, 1999) or 'steering of the mutual dependencies between organizations' (cf. Bekkers, 1993). These references indicate the importance of what I like to call 'learning to establish connections'. I argue that this refers to being capable of making productive use of the characteristics of the network(s) one is embedded in, but at the same time being aware of any modernistic ambitions for that, by avoiding the illusion that one is capable of steering these networks at will. Thus, public policy analysis and innovation should seek connections but without knowing what they will be beforehand. Fragmentation is a precondition for learning to establish connections, as fragmentation is a pattern of connections and not a total final outcome or the result of an *a priori* overview or master plan, but a way to acknowledge and deal with society's plurality. This is especially the case in a fragmented policy domain of water management in which a large variety of public, private and hybrid actors are active to keep our water clean and our feet dry. As one can imagine in such an environment learning to connect may be a vital competence for conceiving and organizing public policy innovation.

Chapter 4

The Concept of Public Policy Innovation

4.1

INTRODUCTION

The characteristics of the network society and its constituting inter-organizational networks, including public policy networks, must have consequences for the way processes of public policy analysis and innovation are organized. The 'resources' for public policy analysis and innovation, such as knowledge, finances, support, legitimacy and organizational capacity, have become widely distributed over a variegation of actors. Networkification of the public domain and society at-large leads to the proposition that public policy analysis takes place in comprehensive networks of public and private actors and is shaped more and more through participatory processes in order to deal with the increased distribution of resources.

In this chapter I will argue that innovation in the public policy domain is a specific type of public policy analysis. Both concepts, policy analysis and public policy innovation, that evolve in public policy networks are discussed by examining their definitions and current manifestations.

4.2

POLICY ANALYSIS: AN INTRODUCTION

As shown in the previous chapter, the process of acquiring data, collecting information and generating knowledge to support change and innovation in a network(ed) society is a vital part of coming to grips with the dynamics and demands of this environment. The knowledge-oriented and research activities that policy actors are enrolled in to tackle what Geurts and Vennix (1989) refer to as 'orientation problems'¹ are usually referred to as 'policy

1 Orientation problems occur in distinct stages of the policy process: problem structuring, generating and (*ex ante*) evaluating policy options and selecting the desired policy option(s). Note that Dunn (1994) speaks of policy-making, whereas Geurts and Vennix (1989) also include evaluating and implementing policies as activities that are supported by policy analysis.

analysis'. An extensive number of policy scientists have studied the nature of policy analysis and have sought ways to make this (more) effective and efficient. Some of them tend to place policy analysis exclusively in the scientific domain, while others regard policy analysis an activity that should be undertaken in the dynamic of social interaction. The debate between the analytical-rational (Hoogerwerf, 1989; Simonis, 1983) and incremental-interactive perspectives (Braybrooke & Lindblom, 1963) on policy-making, is a driving force behind the way policy-oriented research is organized and implemented. This is discussed in the next sections.

4.2.1

DEFINITIONS OF POLICY ANALYSIS

Lasswell (1971) describes policy analysis as a science that is aimed at producing and applying knowledge about policy. The knowledge component in this definition is twofold. On the one hand, knowledge on the concept of policy itself is generated and applied, leading to research questions on the construction of (effective) policies, internal consistency, ways of implementation, what policy effects are being expected and how implemented policies can be governed or fine-tuned to changing circumstances. On the other hand, knowledge on the policy problem and problem-solving alternatives is generated and applied. This leads to research questions like: how is a policy problem perceived (and by whom) within a certain public policy domain (e.g. health care, education)?, what causes this policy problem?, how does this problem become manifest?, and what possible solutions are identified (and by whom)?

Both components are intertwined, if only by the conclusion that the way policies are constructed, implemented and organized could lead to a certain policy problem. Poor goal setting and/or bad implementation could lead to undesirable situations to which yet another policy response. This policy is likely to be supported by analytical activities, in which the two knowledge components mentioned above must be addressed. Undesirable situations following a 'poor policy' could emerge, for example, due to the exclusion of target groups, bad information provision, negative effects caused by calculative behavior, etc. Thus, I argue that in the practice of policy-making, knowledge about policy and knowledge used in policy-making cannot and need not be convincingly separated.

Dunn (1994: 29) defines policy analysis as "an intellectual and practical activity aimed at creating, critically assessing, and communicating knowledge of and in the policy-making process". He argues that policy analysis is "an applied social science discipline that uses multiple methods of inquiry in the context of argumentation and public debate, to create, critically assess, and communicate policy-relevant knowledge" (1994: 62-63). The process of policy analysis has five interdependent stages that together form complex, nonlinear cycles of intellectual activities. These activities are ordered in time and embedded in a policy-making process that is complex, nonlinear and essentially political. Cohen and Lindblom (1979)

speak of professional social inquiry to characterize the pluriform nature of policy analysis that is a social science, combined with many other forms of professional knowledge allied to social science but not properly or entirely scientific. Dunn (1994) perceives policy analysis as a social science that bears the unique characteristic of being able to mediate between and evaluate multiple scientific disciplines, within the natural science and the social science domain. Moreover, it is a means to evaluate² the relevance of various knowledge contributions to structuring the policy problem, its alternatives, and the way the alleged problem-solving policy could be implemented. In addition, policy analysis is aimed at combining both scientific and non-scientific knowledge, both practical and theoretical insights in a context of social debate and political struggle.

Weinberg (1972) refers to policy analysis as a co-production between science and policy. The co-productive relationship between the two domains becomes visible in the interchangeable efforts they display for one another. Research questions are often formulated by policy-makers, thus inadvertently including priorities for what issues should be examined. In turn, scientists are often the first to identify workable definitions for policy problems and feasible solutions for them. Thus, the professionals from the two domains are often involved in a role switch. According to Lasswell (1971), a policy scientist is both “an integrator and a mediator”³. The integrator role consists of combining action (intervening) and cognition (knowledge). In combining acting and knowing, the mediator role is aimed at bringing together knowledge-oriented and policy-oriented actors. Policy analysis incorporates both knowledge-driven rationality as action-driven rationality, i.e. policy-relevant knowledge is generated for the purpose of being used in a context of interaction. As a consequence, requirements are made for what kind of knowledge is generated and how this knowledge is generated. The requirements of this type of knowledge are that it is 1) insightful, eliciting and elaborating on existing knowledge, 2) understandable, at least for policy professionals and politicians, and 3) translatable to alternatives for action.

Dror thinks of policy science as an approach for the use of systematic knowledge, structured rationality and organized creativity on behalf of conscious governance and the transformation of society. Dror (1971: 55) defines policy analysis as “a heuristic methodology for identification of desirable policy alternatives”. The heuristic nature of policy analysis indicates an incremental approach to trial-and-error towards the production of policy-relevant knowledge. Moreover, in this search, indications of what policy alternatives are perceived to be feasible and desirable (and by whom) will emerge.

2 *Ex ante, ex durante and ex post* evaluation are included in the concept of policy analysis.

3 Van de Graaf & Hoppe’s explanation (1989).

4.3

FROM POLICY ANALYSIS TO PARTICIPATORY POLICY ANALYSIS

Despite the broad, widely adopted characteristics, the concept of policy analysis became subject to criticism. It was regarded as a somewhat outdated approach to generating policy-oriented knowledge in a changing societal context (cf. Mayer, 1997). Perhaps Lasswell's main principles (see Section 4.3.2.) can be accepted as a preview of what it takes to organize policy analysis in today's society. The definitions mentioned above no longer applied to new forms of policy-making. The policy process was no longer primarily reserved for governmental agencies and institutions, but became more and more a playground for other, non-governmental actors. This development had to have consequences for policy analysis, if only by allowing these non-governmental actors to contribute to policy-oriented knowledge generation and application. As a consequence, other forms of knowledge (other than scientific or policy-oriented) had to be accommodated in policy analysis, leading to new processes and methods. The previous descriptions and definitions can be considered 'traditionalist'. In these definitions, policy analysis is considered to be:

- Highly rational and analytical activity, following the adagio 'first think (exhaustively), then act (cautiously)';
- Mainly reserved for professionals, both scientists and policy professionals;
- Following prescribed procedures and phases, adding up to predictable and uniform linear processes.

4.3.1

CRITICISM ON TRADITIONAL POLICY ANALYSIS

Mayer (1997: 26-33) identifies five dilemmas or challenges with which the 'traditional' approach to policy analysis is faced: 1) scientism vs. lay knowledge, 2) decisionism vs. multi-actor policy-making, 3) limited utility vs. scientific consensus, 4) disciplinarity vs. scientific consensus, and 5) technocracy vs. democracy. These five dilemmas are briefly discussed here.

The first dilemma is grounded in the observation that traditional policy analysis seems to suffer from what is called 'scientism' (cf. Hawkesworth, 1987). Scientism neglects the relevance of using alternative types of actors (apart from scientists and policy professionals) as sources of knowledge, such as interest groups, citizens, entrepreneurs, etc. In addition, alternative types of knowledge (apart from scientific and/or policy-oriented knowledge, such as practical, lay and tacit knowledge) based on day-to-day experiences are often (deliberately) overlooked. The challenge for a more participatory approach is how to incorporate other 'knowledgeable actors' and other knowledge types into processes of policy analysis.

The second dilemma acknowledges that traditional policy analysis tends to make (too) little account of the pluricentric inter-organizational network character of today's policy-making

practice (see e.g. Hajer & Wagenaar, 2003). Top-down governance is replaced more and more by alternative approaches that incorporate a more balanced interaction between public and private actors, societal groups and citizens. Accordingly, policy analysis must be shaped towards these alternative approaches, starting from and ending with knowledge-based interaction between relevant stakeholders. In doing so, the political and strategic interests of the network actors involved are being made explicit. Moreover, policy analysis may create an environment in which the feasibility of alternative policy options is (*ex ante*) evaluated.

The third dilemma recognizes that traditional policy analysis adds to the awkward relationship between science and policy-making. The substantiated discrepancy between these two domains involved in traditional policy analysis has led to the “two communities concept”. Several authors of the ‘utilization of knowledge school’, such as Weiss (1977) and Caplan (1979), studied the reasons why the use of scientifically-based knowledge in policy-making was limited. The main barrier seems to be the poor communication between science and policy communities, leading to the conclusion that policy scientists should focus more on the process of communication with their clients (i.e. policy professionals and decision-makers). The utilization issue has led to the development of new forms and methods⁴ of policy analysis, improving the advisor–client interaction and communication. As a consequence, early and active participation by the client is sought during the process of policy analysis.

The fourth dilemma indicates that, for a period of time, policy analysis was conducted under the assumption that science was able to attain objective, indisputable knowledge upon which policy decisions could be based. However, this assumption became untenable, as undisciplined scientific claims came under discussion, not only by other scientists from adjacent disciplines but also from non-scientific knowledgeable actors. As a response to this criticism, policy analysis had to abandon its undisciplined approach, instead developing multidisciplinary approaches and arriving at what Mayer (1997: 31) calls “methodological pluralism”. Moreover, policy analysts acknowledge that science means uncertainty. Frissen (2000: 59) indicates that “scientific research leads to more data on what isn’t than on what is known”. Reliable and acceptable knowledge must be embedded in critical debates on data and theories among and across scientific disciplines. Beyond that, other societal sectors must be consulted about the generation of knowledge. However, science is but one of many sources of knowledge. Adding to a more open and interactionist approach to policy analysis, the idea of public exposure took hold, not only for scientists but also for policy professionals, as they realized that their audience exceeds the two communities (cf. De Leon, 1988). As a result, policy analysis was transformed into a consensual activity, by negotiating scientific controversies in academic and analytical policy forums (Jasanoff, 1990).

4 But, as indicated earlier in this chapter, I will not be looking into the methodological aspects of policy analysis.

The last dilemma indicates that the traditional approach to policy analysis appears to be an activity of ‘experts for other experts’, neglecting those societal interests and values which fall outside the technocratic policy-making arrangement (cf. Fischer, 1990). Mayer (1997: 32) points out that this leads to a policy process with an elitist character, separating the policy-maker from the citizens, with a considerable risk of “badly informed advice on what citizens really want or need”. The elitist, anti-democratic character of traditional policy analysis is also discussed by Jasanoff (1990) and Jenkins-Smith (1990). Jasanoff indicates that since science is socially constructed, it should at least be open to interaction with other social constructs, such as ethics, art, general opinion, public debate, etc. Jenkins-Smith draws attention to the barriers for less organized actors and non-expert groups to enter the policy debate. One of the challenges for policy analysis is to develop ways by which less professional (interest) groups, individual citizens and other non-experts at least have the possibility to engage in policy analysis. Mayer (1997: 33) interprets Dryzek’s (1990) beliefs about policy analysis as follows: “Policy analysis should mediate and organize a discourse between societal groups, citizens and stakeholders who find themselves without a common language”. This ‘common language’ should enable these groups to contribute to policy analysis and to the policy process more effectively. A more participatory approach must, in Dryzek’s view, facilitate “a desirable discursive democracy” (Mayer, 1997: 33).

4.3.2

A PLEA FOR MORE PRAGMATISM IN POLICY ANALYSIS

In response to these dilemmas, policy analysis has evolved to an analytical activity supporting the policy process, in which participation of actors other than scientists and policy professionals is explicitly and deliberately sought. Or, at least the question on how policy analysis must be organized, as traditional or participatory (cf. Durning, 1993; Mayer, 1997), is more frequently discussed. Of course, this follows a similar discussion on how the policy process should be conducted: traditionally (i.e. hierarchical, mainly government-driven) or as participatory (i.e. bottom up, mainly society-driven). This does not imply that nowadays policy analysis must always be organized through bottom-up and collaborative processes, but merely that its concrete manifestation is inevitably participatory because of the networked and hybrid character of the public policy domain.

The five dilemmas mentioned above indicate that there are compelling reasons for policy analysis to be more open to participation from other than traditional actors because of the use alternative knowledge sources and of alternative types of knowledge. In addition, the involvement of those who will be affected by policy decisions and of actors who are vital to the implementation of the policy – or at least are vital to avoid obstruction of the implementation – must have consequences for the way policy analysis in a networked and hybrid public policy domain is organized and executed. However, in contrast with Mayer (1997: 36) who argues that a more participatory approach must not result in “anything such as relativism

or postmodernism”, I argue that it is not possible to prevent this from happening. On the contrary, I think that it is desirable to accept a relativist-pragmatist view on policy analysis to help its further advancement. For this argumentation, I will refer to Van de Graaf and Hoppe’s interpretation of Lasswell’s (1971) main principles of policy analysis. Policy analysis should be “contextualized, problem-oriented and diversified and multidisciplinary” (Van de Graaf & Hoppe, 1989: 36-37). Essentially, policy analysis should be contextualized, using the characteristics of the (historic) context of the problem situation and problem owners (actors involved) to shape the research process. Thus, standard, blueprint approaches are ruled out and pragmatic, context-oriented, and jointly accepted processes are designed and implemented.

The problem orientation of policy analysis is obvious and connects strongly to the contextualization plea. Being problem oriented, policy analysis includes assessing the perspectives on the problem at hand, as well as the characteristics of the problem owners concerned. Moreover, problem orientation refers to the need for action, by taking little and acceptable steps towards problem solution. Policy analysis should be diversified and multidisciplinary, using pluralistic methodologies that are based on the recognition that it is a social science. Furthermore, pragmatism is the guiding principle in jointly choosing, designing and implementing methods for knowledge production. In other words, there is no need for methodological debates when the practical outcomes of the applied methodologies do not differ (cf. James, 1907/2005). In this sense, ‘anything goes’ in a methodological respect, as long as it is agreed upon by the actors involved and effective to inform their collaborative analytical policy practices.

All together, the criticism on traditional approaches adds up to a more pragmatic way of organizing and conducting policy analysis. A relativist and pragmatic approach to research activities that leads to knowledge for supporting the policy process is discussed in the relativist/pragmatist inquiry into policy analysis as social science.

4.4

THEORETICAL INTERLUDE: A RELATIVIST– PRAGMATIST INQUIRY ON POLICY ANALYSIS

In my view the previous considerations regarding policy analysis lead to a relativist-pragmatist view on policy-oriented research. The most important reason to look at policy analysis in a relativist manner is based on the assumption that, ultimately, policy analysis is a research activity that belongs to the domain of the social sciences. Of course, in policy analysis, knowledge generated by natural sciences plays an important role, but, nevertheless, this type of knowledge must be translated into options for social action, for example in a framework of ‘who does what, when and how’. The conclusion that policy analysis is a social

science gives enough reason to accept a (more) relativist-pragmatist approach to knowledge that is created and applied in a context of social interaction. This relativist-pragmatist approach stems from:

1. The renouncement of the mirror of nature;
2. The fallibilistic nature of social-scientific knowledge;
3. The reflexive nature of the social sciences.

4.4.1

THE RENOUNCEMENT OF THE MIRROR OF NATURE

In *Philosophy and the Mirror of Nature* Richard Rorty paints a picture of philosophy that has been valid for centuries by arguing that “philosophy can provide a fundament with regard to the rest of culture, because culture is the collection of knowledge claims and philosophy decides upon these claims” (1979: 3). Traditional philosophy assumes to have access to the fundaments of knowledge. From this assumption follows the metaphor (in use for centuries) of the human mind as a mirror of nature: knowing is consciously representing what is outside the (human) mind (cf. Van Den Bossche, 2001). The use of this metaphor is based on the idea that it is possible to understand how the mind constructs these representations. In this way, philosophy strives to be a general theory of representations, aiming at revealing the incontrovertible truth(s) and therefore achieving certainty. The initial openness that encouraged the philosopher to think is covered in a decisive and technical manner. Philosophers tend to ask technical and decisive questions instead of being open to strangeness. Van Den Bossche (2001: 30) claims that abandoning this technical approach to philosophy is, according to Rorty, derived from Heidegger who “replaces technical thinking by level-headed and non-manipulative thinking”. The technical way of thinking, excluding the incalculable, means by definition compulsion and manipulation. Gadamer (1990) also points to the strong tendency to strive for certainty and truth which is present in most Western societies. In pursuing this, modern science has come up with a method, or more accurately put: *the* method. Modern science gives preference to methodological thinking, with the ambition of being able to repeatedly follow the same methodological path to knowledge (cf. Van Den Bossche, 2001). Going about knowledge generation in the same way is methodologically justified and characteristic of modern science. However, this also means that we inevitably encounter a restriction of what is being considered to be ‘true’. If being able to verify and control knowledge generation is more decisive about what is true, then the criterion against which knowledge is measured no longer refers to truth, but to certainty. Only that knowledge which meets the ideal of certainty can be accepted as true.

Of course, this way of thinking is desirable for certain domains, especially in the natural science field of research, such as nuclear physics, civil engineering or astronomy. But in social science, or in social, interpersonal contexts, this way of thinking is less favorable, to say the least. During a certain period of Western philosophy, truth was considered to be similar

to certainty. Rorty (1979: 18) indicates that this decisive historic change within philosophy began with Descartes:

But they say, the Cartesian intuition that the mental-physical distinction is unbridgeable by empirical means, that a mental state is no more like a disposition than it is like a neuron, and that no scientific discovery can reveal an identity remains. This intuition seems to them enough to establish an unbridgeable gap. But such neo-dualist philosophers are embarrassed by their own conclusions, since although their metaphysical intuitions seem to be Cartesian, they are not clear whether they are entitled to *have* such things as ‘metaphysical intuitions’. They tend to be unhappy with the notion of a method of knowing about the world prior to and untouchable by empirical science.

Following Descartes, philosophy as epistemology would be a continuous search for the unchangeable structures in which knowledge, life and culture were enclosed. These structures were (to be) discovered by the privileged representations of the philosopher. Rorty abandons this view on philosophy that regards the mind as a mirror of nature. In his view, philosophy is no longer about confrontation of conflicting representations but about conversations between diverging opinions. Knowledge is a matter of conversation and social practice, instead of a series of attempts to represent nature or, in other words ‘the essence of things’. In this conversation, no one is able to act as some kind of supreme court. There is no meta-practice from which all possible forms of social practice can be criticized. As such, relativism to what we can know is introduced. The quest for certainty ends here, and the philosopher can no longer regard truth as being in contact with reality. From here on, truth is defined as ‘that which is good for us’, a definition that refers strongly to the tradition of pragmatism. And so, an approach of anti-representationalism⁵ emerges in thinking about how to deal with knowledge in today’s society.

4.4.2

FALLIBILISM IN SOCIAL SCIENCES

With reference to the renouncement of representationalism, Hoppe (1998) indicates that there is a changing perspective about policy analysis. Hoppe (1998: 23-26) describes this

5 The reason for emphasizing the need for renouncing representationalism and any illusion of certainty in this thesis lies in the specific (cultural) context in which the case study is situated. Water management is still more or less dominated by a civil engineering perspective on knowledge generation for problem analysis and problem solving. This perspective promises to deliver (a certain amount of) certainty about cause and effect relationships in complex physical-spatial issues. It promises certainty about the impact of (infrastructure) solutions that should deal with these issues, as well about the way in which these solutions will be implemented. The tenacity with which civil engineers claim to possess ‘the mirror of nature’ when it comes to generating knowledge for the design and construction of (infrastructure) solutions for complex physical-spatial issues is astonishing and results in an endless stream of advisory reports (e.g. the report of the advisory committee Veerman about how to complete the construction of the Noord Zuidlijn, June 2009).

change as a turn from empirical-analytical and instrumental rationality to a dialogue of fallibilist-pragmatist rationality. We may argue that this turn begins with Popper's (1961) adagio that scientific theories are by definition fallible; they express an assumption about how things might be. Popper advocates to use the method of falsification⁶, "a process of empirical elimination of hypotheses based on systematic testing of hypotheses and deductive reasoning" (Ulrich, 2006: 3). This means that all scientific theories are provisional, and only have temporal value.

As we have seen in Section 4.2, many definitions of policy analysis are based on the rationalist assumption that it is possible to generate objective, rational knowledge on unshakable truths. This assumption is founded on the expectation that policy analysis as a social science could be cast in the same mold as natural science. Thus, policy analysis should be based on the same methodological principles as in the natural sciences and should arrive at results that could meet the standards of natural science. However, as many researchers have indicated (Toulmin, 2001; Rorty, 1979), the objects of research in the social sciences are fundamentally different from the objects under study in the natural sciences. Next to this, the opinion takes hold that scientific knowledge, even natural scientific knowledge, is always of a fallibilist nature. Fallibilism implies the acknowledgment of the possibility of being wrong, and the willingness to learn from this by reviewing one's assumptions. Hoppe (1998: 25) states that "the Cartesian idea of an 'or-or' situation in which knowledge is vested in solid principles of certainty and rationality or becomes subject to relativist swamp of intellectual and moral chaos" is abandoned more and more often. Thus, rationality becomes an approach to the extent that we realize that "although we must begin any inquiry with prejudices and can never call everything into question at once, nevertheless there is no belief or thesis, no matter how fundamental, that is not open to further interpretation and criticism" (Bernstein, 1991: 327). The conclusion can be drawn that Bernstein advocates dealing with social-scientific, policy-oriented research in an ironic way (cf. Rorty, 1989).

In the initial stage of research, certain boundaries and assumptions are needed, but these values and hypotheses must, nevertheless, be open to further interpretation and/or criticism. In other words, to make research possible, some principles are necessary, but these must be abandoned if, from the research process, it appears that they are no longer serviceable (cf. Jasanoff, 1990) to that research. In this respect, rationality is considered to be an openness to learning, a proposition that assumes the policy researcher is part of the social context of an acting and dialoguing community (Hoppe & Peterse, 1998). The policy scientist does not have an isolated position in relation to the location of the discussion and action, the policy arena, but is part of that. The knowledge and policy arenas are intertwined and interact intensively. This interaction is indispensable. The RMNO (2000) indicates that the com-

6 This method contrasts with the logical positivist method of verification, a process of empirical validation of hypotheses based on systematic observation and inductive reasoning. Perhaps this is way Popper's theory is referred to as critical rationalism (see Ulrich, 2006).

munication between research and policy-making contributes to the quality of democratic decision-making and cooperation between governmental agencies and societal actors in the governance of our society. Moreover, communication between policy arenas and knowledge arenas enhances the chance for smoother decision-making and implementation. And finally, the involvement of a wide diversity of values can lead to more creative solutions.

4.4.3

THE REFLEXIVE NATURE OF SOCIAL SCIENCES

Reflexivity addresses the mechanism of self-reference. This mechanism occurs when research and/or policy intervention ‘folds back on’, and thus changes, the entity or actor investigating the research and/or policy intervention. Reflexivity occurs when the observations and/or interventions by observers and/or intervening actors in the social system influence and change the situation they are observing and/or intervening in. This mechanism also emerges when a (research or policy) theory is being disseminated to and thus affecting the behavior of the subjects or systems the theory is meant to ‘objectively’ model or explain. As a consequence, observation and/or interventions are never independent of the participation of the observer or initiator.

The concept of reflexivity applies especially to the social sciences (In ’t Veld & Verhey, 2000: 113). The consequences of the reflexive nature of social sciences studying social systems can perhaps be best understood by the work of the sociologist William Thomas (cf. Coser, 1977). Thomas (1929: 572) introduced the well-known adagio that “[i]f men define situations as real, they are real in their consequences”. What Thomas meant by this famous sentence is that people do not only respond to the objective characteristics of a situation, but also, and often mainly, to the meaning that situation has for them. And when these meanings have sunken in, people’s subsequent behavior follows the experienced or perceived meaning. Reflexivity entails the assumption that our ideas and expectations have their influence on the way we act. Reflexivity refers to the reciprocal nature of human agents and their (social) environment. This is indicated by Weick (1995: 31) who claims that “... there is *not* some kind of monolithic, singular, fixed environment that exists detached from and external to these people. Instead, in each case the people are very much a part of their own environments. They act, and in doing so create the materials that become the constraints and opportunities they face”. Weick refers to the ‘mechanism’ that actions of human agents bend back on them because they shape the (social) environment in which they have to function. Thus, reflexivity in policy processes means that we determine and shape our future by our policy decisions and interventions, for example in economic policy (see: Gels, 2001)⁷. With regard to the consequences reflexivity has for social sciences, Frissen (2000: 59) indicates

7 In Dutch: Reflexiviteit houdt het besef in, dat denkbeelden en verwachtingen invloed uitoefenen op ons feitelijk handelen. Bijvoorbeeld, reflexiviteit in de economie betekent dat wij zelf met onze eigen beslissingen en handelingen bepalend zijn voor de economische toekomst.

that “every social scientist knows that with intelligent manipulation of questioning, research can prove anything that is desirable”. At the same time, the natural science preoccupation of the parties involved in research activities comes into play: research is conducted to reduce uncertainty. Unfortunately, the opposite effect inevitably tends to occur: research increases uncertainty. This mechanism refers to the fundamental reflexivity of knowledge, including natural scientific knowledge. Each form of knowledge production leads to learning among the actors involved, and thus to changes in the (social) context. The more knowledge that is generated and communicated, the more that knowledge influences the images of reality (cf. Frissen, 2002⁸). In addition, knowledge production changes the empirical reality to which it refers, because the produced knowledge is added to reality, and therefore the conditions of its validity are changed (cf. Frissen, 2000).

4.5

POSITIONING PARTICIPATORY POLICY ANALYSIS

Dunn defines participatory policy analysis (1994: 84) as follows: “an applied social science discipline which uses multiple methods of inquiry in contexts of argumentation and public debate to create, critically assess, and communicate policy-relevant knowledge”. Laird (1993: 353) emphasizes the learning aspect of participatory policy analysis by claiming that

Participatory analysis requires a specific kind of learning process while people or groups engage in participation. In this view it is not enough that participants simply acquire facts. They must begin, at some level, to be able to analyze the problem at hand.

In the line of reasoning of this thesis, ‘learning through participation’ illustrates the tendency that policy analysis is turning⁹ (or has turned) into a process of deliberation, negotiation, sensemaking and continuous adjustment to changing contextual circumstances. Participation, learning and, in this study’s perspective, reflection in processes of policy analysis refer seamlessly to theories on collaborative (cf. Innes & Booher, 2003), deliberative (cf. Hajer & Wagenaar, 2003), frame-critical (cf. Schön & Rein, 1994) or argumentative (cf. Fischer &

8 Notes of Frissen’s lecture at the ministry of Public Works, Transportation and Water Management.

9 One would think that based on the deliberations in Section 4.3.1 policy analysis has changed from a strictly rationalist to a (more) deliberative activity. However my personal experience as a senior researcher at a knowledge institute that executes policy analysis indicates that the rationalist approach still lingers on, and sometimes even prevails. This is not solely due to the researchers’ and the managerial preoccupations that ‘inhabit’ these institutes, but to the (personal) preferences of their clients. Many of the professional counterparts at government agencies still aim for definite, objective and immutable outcomes of policy analytical research with which their network partners can be confronted. We might assume that knowledge institutes that recognize these preferences and have thrived on them are not likely, or even incapable, of exploring more deliberative and participatory forms of policy analysis.

Forester, 1993) policy analysis. I have no interest in dissecting the differences between these theories to define participatory policy analysis. These theories about the changed nature of policy analysis are grounded in increased stakeholder participation, new combinations of various types of knowledge and a perceived need for more dialectical processes between stakeholders, interests and knowledge. These theories thrive on a learning orientation, moving away from top-down, blueprint policy planning, and giving room and attention for more reflective forms of policy analytical practice.

4.5.1

PARTICIPATORY POLICY ANALYSIS AS POST-NORMAL SCIENCE

The relativist perspective on science and its contributions to policy processes is captured by the concept of post-normal science (Funtowicz & Ravetz, 1993) and also by the concept of mode 2 knowledge (Gibbons et al, 1994). These concepts advocate a socially justified and reflexive way of science that acknowledges the social context of research and in which other, non-scientific experts are involved. Funtowicz and Ravetz argue that, in today's society, science has to consider fundamental uncertainties in policy issues on societal risks and environmental challenges. Post-normal science must be able to deal with the renouncement of traditional dichotomies of facts versus values and knowledge versus ignorance. Applied science, professional consultancy and post-normal science connect to policy situations that are characterized by an increasing manifestation of uncertainty and a wide variety of policy interests (cf. In 't Veld & Verhey, 2000). As more complex uncertainties emerge, controlling the scientific quality of research activities is subject to evaluation by a broader group of stakeholders. It is desirable that this be a pluralistic group composed of scientific experts as well as non-scientific experts.

In post-normal science, ideas like 'negotiated knowledge' (cf. Frissen, 2000) and 'serviceable truth' (cf. Jasanoff, 1990) have become metaphors for the relativist way of dealing with policy-oriented knowledge. These ideas strongly refer to the constructivist and strategic perspectives on policy analysis, as we will see in Section 4.6. Negotiated knowledge is knowledge that is the result of negotiations among scientists and between scientists and the stakeholders involved. Jasanoff (1990) advocates abandoning the strict of boundary between science and policy because it proves to be fruitful when stakeholders join the negotiations about the choices to be made in a process of policy analysis. Or, as Jasanoff (1990: 230) puts it:

...scientific advisory proceedings, no less than administrative proceedings of a non-technical kind, are most effective in guiding policy when they foster negotiations and compromise.

This does not mean that science and policy should entirely assimilate when engaged in a process of policy analysis. Even negotiated knowledge should live up to the qualification of good science and must not be compromised by political negotiations (Van Eeten & Ten Heuvelhof,

1998: 171). Serviceable truth is “a state of knowledge that satisfies tests of scientific acceptability and supports reasoned decision-making, but also assures those exposed to risk that their interests have not been sacrificed on the altar of an impossible scientific certainty” (Jasanoff, 1990: 250). This quote not only refers to the production of useful, serviceable expertise, abandoning the idea of unshakable truths, but also to sustainability and robustness, as this type of knowledge is more proof against the deconstructive efforts of (opposing) actors and therefore should be able to play a more lasting role in the policy debate. Van Eeten and Ten Heuvelhof (1998) advocate the process-contingent application of scientific knowledge. In this respect, process-contingent means that the application of scientific tools in research is determined by the characteristics of the policy process, without assimilating them in this process. They suggest several principles to organize the process-contingent application of scientific knowledge, such as:

- organizing research as a process, adjacent to the decision-making process;
- avoiding the emergence of ‘mandated science’ (cf. Salter, 1988) in which decision-making is mandated to scientists;
- stimulating stakeholders to come up with alternative, researchable options;
- facilitating the production of ‘negotiated knowledge’.

In ’t Veld and Verhey (2000: 107) stated that “knowledge is a product of struggle and interaction between parties with diverging interests who constitute coalitions with shared values”. Participatory policy analysis seems to include these components of learning that correspond to the strategic motives that led to their initial application. Knowledge is collectively generated and exchanged for the problem situation at hand, for the societal and policy context of that problem, and for ways of dealing with that problem. The relativist perspective as elaborated in this interlude indicates the favorability of a crossover in scientific, advisory, lay and other types of knowledge to support the policy process. However, this crossover does not just apply to the knowledge domain of the science-policy duet, in the sense that science represents knowledge and policy represents purposefulness. The crossover also refers to the mechanism in which scientists become policy-makers and policy-makers become applied scientists. Hoppe (2002) calls this mechanism “border traffic”¹⁰ between scientific professionals and policy professionals who are both involved in policy analysis. This metaphor strongly refers to Jasanoff’s “boundary work” in which she indicated the prudence with which cross border activities between science and policy regarding ‘the production of serviceable truth’ should be managed.

10 In Dutch: Grensverkeer. A background study for the Advisory Council for Scientific and Technology Policy: Van flipperkast tot grensverkeer; veranderende visies op de relatie tussen wetenschap en beleid. AWT, 2002.

4.6

THE FOUR PERSPECTIVES ON PARTICIPATORY POLICY ANALYSIS

The benefits of participatory policy analysis have been examined from various perspectives (Geurts & Vennix, 1989; DeLeon, 1990; Durning, 1993; Laird, 1993; Mayer, 1997). These authors observed that traditional approaches to policy analysis, today, no longer work. This observation is grounded in the way today's network society is organized, in the changing role of research in policy processes, and the changing relationship between researchers and policy professionals. The benefits of and needs for participatory policy analysis can be understood along four perspectives on this phenomenon: 1) the pluralist perspective, 2) the critical perspective, 3) the constructivist perspective, and 4) the strategic perspective. These perspectives¹¹ are discussed in line with Mayer's study (1997) as they respond to the traditional approach to policy making, assuming that policy analysis had evolved to rational activity, dominated and carried out by bureaucrat officials and scientists.

4.6.1

THE PLURALIST PERSPECTIVE ON PARTICIPATORY POLICY ANALYSIS

The pluralist perspective advocates bringing the political dimensions of policy-making back into policy analysis and strengthening democracy via interest representation and political accommodation. Furthermore, it finds an escape route for scientific uncertainty and subjectivity by relying on a probed scientific consensus among scientists and public policy actors. With this perspective, the main contributors to participatory policy analysis are scientists and representatives of special interest groups. The pluralist approach follows the partisan or advocacy perspective on policy-making which resides under the incrementalist's view of problem solving through policy making (Braybrooke & Lindblom, 1963). The incrementalist's view of policy-making is based on the assumption that rationality in policy analysis (as problem-solving capacity) is "bounded, incremental, and political" (Mayer, 1997: 39). Policy

11 In my view there seems to be a division between the pluralist and critical approach on one hand, and the constructivist and strategic approach on the other. This division can be explained by Rorty's 'mirror of nature'. In one way or another, the pluralist and the critical approaches seem to assume that it is ultimately possible to reach objective knowledge of the world outside. 'Objective knowledge' can be reached by organizing participation in policy analysis that must ensure the input of all possible scientific, non-scientific and interest-related knowledge. The confrontation of these knowledge bases must result in a consensus on the knowledge that will be used in the policy-making process. This consensus-based knowledge is a complete and consistent picture of reality, i.e. the nature of a policy problem and its possible solutions. In contrast, the constructivist and strategic perspectives both abandon the assumption that it is possible to reach a complete and consistent picture of 'reality'. The constructivist approach assumes that reality is a social construct. Thus, science is a social construct, and therefore, scientific knowledge is not something that can be found in the outside world, but is the result of constructive activities. The strategic approach has strong connections to the relativist/pragmatist approach, assuming that definitions of reality are real as far as they are temporarily functional for the strategic goals of actors in a policy network to be realized. Once these strategic goals shift, the definition of reality will have to change accordingly.

scientists are faced with 'bounded rationality' (cf. Simon, 1982), forcing them to triangulate their knowledge-acquiring activities. This can be done by confronting scientific knowledge and policy recommendations from different perspectives, involving different scientific domains and different actors. Therefore, the pluralist argument for participation is reaching both scientific and actor-interest consensus¹². In the pluralist perspective, policy analysis requires the participation of interest groups and other actors to obtain socially supported and feasible policy advice.

4.6.2

THE CRITICAL PERSPECTIVE ON PARTICIPATORY POLICY ANALYSIS

The critical perspective provides an alternative for scientism and technocracy. Scientific rationality is replaced by a communicative rationality in an undistorted or ideal-speech situation. There is an emphasis on strong democracy via open, unmanipulated societal discourse (cf. Habermas, 1976). True participatory policy analysis is represented when mature individual citizens are able to engage in un-inhibiting political discourse. The main participants and contributors are those who are directly affected by policy decisions, e.g. 'ordinary citizens'. The critical approach to policy-making assumes that policy analysis must be based on true consensus, which is the outcome of a free and open communication process. The critical view of policy analysis is concerned with societal interactions and provides an analysis for the legitimacy of this interaction. Based on Forester (1985), Mayer (1997) indicates that this analysis must help to distinguish true learning from manipulation. The critical arguments for participation strive for a constraint-free consensus and empowerment of citizens and interests less recognized.

4.6.3

THE CONSTRUCTIVIST PERSPECTIVE ON PARTICIPATORY POLICY ANALYSIS

The constructivist perspective criticizes the positivist conception of knowledge. It provides an alternative by its belief that knowledge is socially constructed. Therefore, policy advice has to be continuously constructed in interpretative forums by actors who have different perspectives on a policy issue. In this regard, participation in policy analysis contributes to the social learning of those participants. Because science is a social construct as well, the distinction between scientific and lay knowledge becomes blurred. The main contributors

12 There is a substantial amount of uncertainty in scientific knowledge and disagreement among scientists. For policy-making, it is necessary to rely on knowledge that is reached by tested scientific consensus, using forums where both scientists and stakeholding actors can challenge scientific theories and results. Participatory policy analysis is sometimes partly organized to reach consensus in scientific knowledge that should be used in policy-making. Often, this consensus-based scientific knowledge is confronted with other types of policy-relevant knowledge of citizens and/or consumers, e.g. in consensus conferences. The same argument applies to the desired actor-interest consensus. The accommodation of various interests in policy-making implies that some level of agreement and consensus between interest groups and other actors is reached.

are actors holding different perspectives on the same issue. The constructivist perspective regards reality and science as social constructs¹³. 'Reality' grounded in empirical observations only exists in the context of a mental framework for thinking about them. That means that no theory can ever be fully probed, so that there are no definitive criteria for preferring one theory over another. This presupposes a relativist position to policy analysis. The mental frameworks consist of values that determine our perception of reality. This redefines the relationship between the knower and the object of knowing that cannot be separated from each other. Moreover, knowledge is based on consensus, with the conviction that this consensus does not refer to a reality independent of the people who consent to it. This consensus can never be tested. The construction of consensus is subject to continuing confrontation with other forms of constructed consensus. From this, the conclusion must be that theories have their value and validity in their own social context that is shaped by actors participating in activities of policy analysis.

More and more, scientists are considered not to be impartial instruments of knowledge creation. This means that scientific knowledge is never value-free, in the sense that (professional) interests and (political) opinions of the scientists involved play an important role in their research work and cannot be switched off. In the constructivist view, this is not a problem, as long as it is recognized at all times, if only by accepting that the generated knowledge is but one possibility among a variety of other possible knowledge. Dant (1991: 146) argues that the "social context always impinges on the practice of science and also plays a part in determining what counts and is certified in the scientific community as scientific

13 The constructivist argument for participation in policy analysis lies in the sociology of knowledge (Collins, 1982; Latour & Woolgar, 1979) which suggests that scientific rationality itself is merely a construct among many others. Tacit and lay knowledge are claiming a status equal to that of scientific knowledge. The combination of scientific and lay knowledge is a challenge for policy analysis, often referred to as mode 2 knowledge by Gibbons et al. (1994). Constructivist methods are based on the ongoing interaction between the subjects of inquiry moderated by the inquirer, or the continuous interaction between the knower and the object of knowing. The inquirer may set the agenda and moderate the knowledge negotiation process, but the interaction and development of consensus lies within the group. An important reason for actors' participation in knowledge generation is that "they are in a position to broaden the range of evaluative inquiry to the great benefit of the hermeneutic, dialectic inquiry" (Guba & Lincoln, 1989: 54). This means that it becomes a dynamic activity with the aim of helping to understand the (policy) motives of the actors involved. Or as Mayer (1997: 43) phrases it: "The objective of hermeneutics dialectics is to reach intersubjective consensus, i.e. an understanding and sharing between various people of each other's interpretation". Thus, actors are invited and able to apply different interpretations to a policy issue. Guba and Lincoln conclude that consensus does not imply a greater degree of reality for whatever is agreed upon. It simply means that those in agreement have come to share a construct that has real meaning for them. Furthermore, the consensus is the product of human conceptual exchange in a particular context or social setting. It may be clear that participatory policy analysis makes a direct connection between cognition and action. This is indicated by Weick (1979) who claims that understanding (cognition) and policy-making (action) are two sides of the same coin. The close interaction between knowing and acting resides within the constructivist approach, as Mayer emphasizes the continuous interaction and recontextualization of multiple realities within these processes.

knowledge". Professional interests of the scientific community involved will influence the perceived status and quality of the generated (scientific) knowledge.

4.6.4

THE STRATEGIC PERSPECTIVE ON PARTICIPATORY POLICY ANALYSIS

The strategic perspective is based on the criticism of top-down, unicentric modes of governance. Instead, it is a reification of the network theories which emphasize alternative forms of government-society interactions. It regards participatory policy analysis as a strategy to explore and develop win-win situations among strategically acting stakeholders. Thus, the main contributors are actors who own important strategic resources.

The strategic perspective has strong connections with the relativist-pragmatist approach to policy-making. It assumes that definitions of reality are real as far as they are functional for actors to realize their objectives in a public policy network. This assumption is based on contingencies and interdependencies that characterize public policy networks. The interdependencies develop their meaning in the interaction patterns that evolve between policy network actors. Actors are not solely relying on reaching rational strategic decisions, but also leave the possibility open to accept irrational decisions. Irrational decisions are the result of "simultaneous and conflicting rationalities that make the outcomes of strategic decision-making processes unpredictable and uncontrollable" (Mayer, 1997: 45; cf. March & Olson, 1976). This may indicate that the function of policy analysis is to be persuasive or rhetorical for the public policy network as a whole (cf. White, 1994).

In that respect, participatory policy analysis may have a binding and consensus-building effect for the network actors who are involved in the policy-making processes. Contingency refers to the temporal nature of decisions and alliances in public policy networks that are in flux all the time. The strategic perspective stresses the perceived necessity to make use of interdependencies and interactions within public policy networks. It emphasizes alternative ways of policy-making, such as interactive or communicative approaches. In these approaches policy actors increasingly perceive their role as 'policy network brokers' whose main task is to enhance and support interdependent societal systems (cf. Mayer, 1997).

Strategic participation in policy analysis lies in the perception that cooperation between autonomous yet interdependent actors is necessary because they themselves cannot solve a problem single-handedly (cf. Mayer, 1997). Each of the actors involved possesses some of the problem-structuring and problem-solving capacity. The required cooperation is based on a shared strategic rationality triggered by some kind of communicative forum that facilitates the actors to interact and exchange information (also denoted as 'network management', cf. Klijn, 1996). This observation adds to one of the earlier stipulated motives to applying participatory policy analysis. With the strategic approach, designing and applying participatory policy analysis may contribute to network management by collective assessment of

the contextual characteristics of the problem situation and joint exploration of the possible ways of organizing the research activities¹⁴.

4.7

PUBLIC POLICY INNOVATION AS SPECIFIC FORM OF PARTICIPATORY POLICY ANALYSIS

In the last section of this chapter I will elaborate on a specific form of participatory policy analysis, that is, what I call public policy innovation. The reason for this is that this study is framed by the innovation efforts of a government agency in the public policy domain of water management. To understand the endeavors of the policy professionals who are assigned to organize and implement these efforts, we have to examine the concept of innovation first. This will be done by looking at its definitions and its recent development in the networked society. Second, I will examine the concept of innovation in the public policy domain. What does it represent? What are the preconditions for its manifestation? How can we recognize it as such? How does it differ from 'normal' policy-making, and how can it be operationalized?

4.7.1

THE CONCEPT OF INNOVATION

What is innovation? According to Van Dale's dictionary, innovation is "trying something new". The American Heritage Dictionary defines innovation as "the act of introducing something new". Thus, the concept of innovation refers to an activity. According to the Wetenschappelijke Raad voor het Regeringsbeleid (here after abbreviated to WRR) (2008a: 23), "Innovation literally means renewal. Innovation is a process as well as its outcome". Apparently, innovation constitutes both cause and effect simultaneously, making it a reciprocal concept. Notice that these definitions are neutral, as in non-normative, which is remarkable because innovation is commonly associated with improvement or progress. Next to the action-orientation of innovation, this concept tends to have a technological connotation. Innovation is often connected to technological change. Teece (1986: 285-305) defines innovation as "certain technical knowledge about how to do things better than the existing state of the art". Foote (1992: 11) offers a definition that acknowledges the variety of the scope of innovation: "Innovation can be seen broadly as a process leading to technical change, or the concept can be more narrowly applied to a specific new product or technique".

14 However, the instrumental temptation of using participatory policy analysis as a scapegoat for network management should be avoided because this tends to meet the desire of being able to design and control policy networks. Of course, this is illusive, because it presupposes the idea of representationalism that was abandoned earlier (section 4.4).

For introducing something new, be it technical or not, knowledge is an important resource (cf. Brandsen, 2004). The required knowledge has a pluriform nature: knowledge about needs and preferences of citizens and consumers, knowledge about potential new ways to address these changing needs and preferences, and knowledge about how to organize knowledge production and transfer in a networked society. Chesbrough (2006) has captured the search for knowledge on behalf of innovation by his concept of “open innovation”. With this concept he attempts to characterize the consequences of network society for this search process by examining the current state of what he calls “the knowledge landscape”. The rationale of open innovation is explained below.

4.7.2

THE NETWORK SOCIETY AND THE ERODED KNOWLEDGE LANDSCAPE

The concept of innovation is often attributed to the business sector. Innovation is associated with private sector firms, whether small niche companies working around the expertise of one or two geniuses or multinational enterprises with large R&D departments, that invent and market new technologies ‘wrapped up’ in new products or services.

If we want insight into today’s innovation practices, we must examine the ways in which firms innovate. The current state of affairs in the innovation landscape can be best understood by Chesbrough’s (2006) perceived shift from an existing closed innovation paradigm to a concept of open innovation. The closed innovation paradigm is characterized by an inward focus on knowledge generation and application in private sector firms. They have organized the production and processing of new knowledge in internal R&D-departments that occasionally work with universities and technology institutes. Chesbrough (2006: 24) characterized the knowledge landscape in the first half of the previous century as “a series of fortified castles located in an otherwise impoverished landscape”. In his opinion, knowledge creation and innovation was monopolized by large firms and their R&D departments, sometimes in close cooperation with (technical) universities.

This ‘impoverished landscape’, however, came under pressure in the second half of the previous century. This pressure emerged along what Chesbrough (Ibid., p.34-41) calls four “erosion factors” that have made the closed innovation paradigm obsolete. The drivers behind the erosion factors¹⁵ can be found in the societal and technological changes that char-

15 Chesbrough describes the following four erosion factors. First, the increasing availability and mobility of skilled workers intensified the diffusion of knowledge that simplified the access of new ideas and technologies for all types of users. Second, the increased market for venture capital made it more attractive for R&D workers to leave their departments at large firms and start a business of their own or join a new start-up firm. Building on these factors, a third erosion factor comes into play, namely, what Chesbrough calls “external options for ideas sitting on a shelf”. By this he means the alternative routes for good ideas to go to the (consumer) market. These external options decrease the firm’s possibilities to buffer their R&D inventions by putting them on a shelf and waiting for the appropriate time to market them. An additional difficulty is the shortened lifecycle of products which also decreases the time to market new technologies. The fourth erosion factor is the increasing capability of external suppliers that makes the necessity of maintaining internal sup-

acterize the network society (Section 3.3). These erosion factors gave rise to a new innovation paradigm, that of open innovation which is “based on a different knowledge landscape with a different logic about the sources and users of ideas” (Ibid., p. 43). In earlier days, firms were able to monopolize the knowledge needed for their performance. But in Chesbrough’s view (Ibid., p. 44) this has changed dramatically: “Today, there is an abundance of knowledge in virtually every field around you. The proliferation of public scientific databases and online journals and articles, combined with low-cost internet access and high transmission rates, can give you access to a wealth of knowledge that was far more expensive and time consuming to reach as recently as the early 1990s”. Of course, this development strongly refers to Castells’ (2000) concept of the information age. Chesbrough (2006: 45) thinks that the proliferation of knowledge encourages the end of knowledge monopolies that existed in the closed innovation paradigm:

The rise of excellence in university research and the increasingly diffuse distribution of that research means that the knowledge monopolies built by centralized R&D organizations of the twentieth century have ended. Knowledge is far more widely distributed today, when compared to, say, the 1970s. And this far greater diffusion of knowledge changes the viability and desirability of a closed innovation approach to accessing and taking new ideas to market.

However we can argue whether this argument is entirely valid. In everyday organizational activities we see evidence of all kinds of efforts to maintain or restore knowledge monopolies, in order to achieve competitive advantages. We only have to think of patents and intellectual properties to see that private sector firms and knowledge institutes go to great pains to close their knowledge circuits. And what to think of hostile take-overs and mergers that are initiated to make sure that unique knowledge is accessible at low cost at all times, with the positive side effect for the firms involved of excluding competitors from accessing this knowledge?

But if we could accept Chesbrough’s claim for the emergence of a new, more egalitarian knowledge landscape, what would the consequences for the innovative logic of firms and other organizations be? Chesbrough (2006: 49-51) describes the following developments. First, firms have (largely) abandoned the logic of “deep vertical integration” through which they conduct and control every aspect of a business internally, including knowledge generation and application in R&D processes. Instead, firms advance their technologies by looking outside for new ideas and outcomes of (scientific) research. Second, firms largely reverse the

pliers (and their knowledge bases) obsolete. This increases the firm’s flexibility to move with the market, but, in turn, it broadens the external options for ideas of its internal R&D efforts. This has led to an uncontrolled leakage of knowledge and ideas to capable external others who are able of sharing this knowledge with other (competing) firms.

not-invented-here (NIH) ideology they have pursued for a long time: “Today NIH means that companies need not invent the wheel, since they can rely on external sources to do the job effectively” (Ibid., p.49). Third, firms take on active surveillance of the surrounding knowledge landscape to get access to specialized knowledge on a timely basis. Instead of knowledge creation, the firm’s researchers must be capable of scanning and assessing a wide range of science and technology, and be able to “envision how to integrate promising discoveries into new systems and architectures” (Ibid., p. 50) for the firm’s performance.

These developments seem to refer to a more systemic approach to innovation (see: Hekkert et al., 2006). WRR (2008a: 33) refers to a shift from “a focus on R&D to a focus on the innovation system”, indicating that innovation has evolved from an internally-oriented to an outward-oriented networked activity. Actors engaged in innovation processes will have to develop a collaborative capacity for horizontal coordination (cf. Frissen, 1999) with regard to organizing the resources for their innovative efforts. Innovation tends to emphasize the capacity for putting together pieces of internal and external knowledge in search of new products or services¹⁶.

4.7.3

OPEN INNOVATION AS A RESPONSE TO THE NEW KNOWLEDGE LANDSCAPE

Following the need for more horizontal coordination with regard to innovation, Chesbrough (2006: 51) argues that firms should engage in a new logic of innovation:

Companies must structure themselves to leverage this distributed landscape of knowledge, instead of ignoring it in the pursuit of their own internal research agendas. Companies increasingly cannot expect to warehouse their technologies, waiting until their own businesses make use of them. The new logic will exploit this diffusion of knowledge, rather than ignore it.

This leads to changes in the assumptions firms have about doing business. Firms will make money by increasing the opportunities for marketing their technologies, instead of profiting from “hoarding technology for their own use” (Ibid., p. 51). Next, sound research practices in firms will also comprise accessing, assessing and applying external ideas and technologies, instead of restricting R&D efforts to inventing new (private) knowledge. Lastly, the management of intellectual property becomes a necessity to advance the firm’s business model and to make money from the competitor’s use of your intellectual properties. However, this tends to contradict Chesbrough’s claim about the increased accessibility of knowledge in the eroded knowledge landscape. Intellectual property regulates the exclusive use of certain knowledge for a limited number of actors (or allows for the use of this knowledge at

16 Chesbrough (2006) indicates that this results in additional administrative-procedural provisions in securing intellectual properties, acquiring ‘external resources’ (venture capital) and splitting profits.

high costs). The idea of intellectual property refers to the competitive advantage that firms can achieve by accepting and executing the new logic of innovation. Chesbrough (Ibid., p. 52) argues that

[k]nowledge diffusion rewards focused execution: you need not invent the most new knowledge or the best new knowledge to win. Instead, you win by making the best use of internal and external knowledge in a timely way, creatively combining that knowledge in new and different ways to create new products and services.

Open innovation builds on the notion that the capability to scan, access, assess, integrate and broker new knowledge is far more important than the conception and application of internally generated knowledge. Open innovation, therefore, changes the role of R&D workers in firms and other organizations. Instead of adding to ‘the knowledge sitting on a shelf’, they are now responsible for moving knowledge on and off the firm’s shelves. This means that internal and external knowledge are equally appreciated as long as they contribute to advance the firm’s performance in the market place. Chesbrough has framed open innovation along the changing relationship between firms and the knowledge infrastructure that is composed of universities, technological institutes, (engineering) consultancies and experts. But he also argues to bring customers to the playing field of innovation. He does so by referring to Von Hippel’s (1988) observation of the impact that open source technologies had on the sharing of new ideas among (potential) users.

Von Hippel (2005) claims that the changed relationship between producers and lead users of new knowledge and technology “democratizes innovation”. Lead users tend to develop and modify products for their own benefit and often share their findings freely with other users. In turn, many users can make productive use of solutions that have been conceived by other users. Both mechanisms indicate a fundament for what Von Hippel (2005: 176) calls “user-centered innovation systems” that can either replace or complete the “traditional manufacturer-based innovation system”. Foray (2004) suggests placing users at the heart of knowledge production. This challenges firms to assess and catch knowledge being generated by users online during the process of producing and doing business, and to combine or integrate that with knowledge created offline in R&D facilities. As a consequence, innovation has become multi-actor game that involves entire networks of actors putting new goods and services on the market.

4.8

INNOVATION IN THE PUBLIC POLICY DOMAIN

After the preceding indications that the ‘innovation game’ has been seriously changed under influence of network society’s dynamics and the subsequent changes in the knowledge landscape, the next issue is to describe and explain innovation in the public policy domain. How can actors in the public domain – as Van Dale’s dictionary indicates – introduce something new? And more importantly, how can we recognize public policy innovation? How does it differentiate from ‘normal’ policy-making? To answer these questions, I will first discuss the concept of public policy innovation by examining what brings it about. The concept of innovation has an essentially difficult relationship with the public policy domain because of its contrasting tendency to look at change instead of stability. Next, I will look into possible strategies for organizing innovation processes in the public policy domain. Lastly, I will examine some strategies for operationalizing public policy innovation.

Before looking into the concept of public policy innovation, I would like to emphasize that this not the same as innovation policy¹⁷. Innovation policy can be defined by the efforts that public policy actors can undertake to improve the innovation system (cf. Hekkert et al., 2006) that is composed of private sector firms, knowledge institutes and technology developers. Public policy innovation addresses the renewal of the characteristics *of* and the phenomena *in* the public policy domain, such as policy objectives and measures, instruments and resources, alliances and institutions. Following the open innovation paradigm, this renewal is informed by collaborative processes of knowledge generation.

4.8.1

DEFINING PUBLIC POLICY INNOVATION

Brandsen (2004: 39) defines innovation in the public policy domain as “the deliberate effort to replace old routines” in order to be successful in a new policy regime¹⁸. He advocates using the term innovation to emphasize “that switching routines is not a mechanical process, but a costly and uncertain quest for new knowledge”. The question is how a new policy regime is brought about. What kind of new knowledge is aimed at? And, can all changes in policy regimes qualify as public policy innovation?

I argue that we may speak of public policy innovation when the desire for a new policy regime is deliberately pursued in an attempt to operationalize a shift of the existing policy

17 Innovation in the public policy domain is often limited to developing and implementing innovation policies that support the knowledge infrastructure and stimulate economic growth. It bears the connotation of making (private sector) innovation possible through public policy and not so much of perceiving the public policy domain as object of innovation.

18 In his book, quasi-market governance in the policy domain of housing.

paradigm. Such a shift can be perceived as both ‘a given situation’ or as self-initiated by public policy actors. My argument is based on the observation that public policy innovation is commonly distinguished from normal processes of policy making. Public policy innovation refers to an extraordinary type of policy-making. Kuhn (1962) distinguished normal science from revolutionary science to indicate the dramatic and fundamental changes in the scientific worldview. Analogous to normal science I argue that ‘normal policy making’ should be perceived as ‘thinking inside the box’ of the existing policy regime, whereas public policy innovation – or to paraphrase Kuhn, revolutionary policy making – refers to the desire to ‘think outside the box’.

The next question is what constitutes a policy paradigm shift. To answer this question we must know what a paradigm is. The American Heritage Dictionary (2000; fourth edition) defines paradigm as “...one that serves as a pattern or model”. Burke (1979: 34; based on Kuhn, 1962) claims that a paradigm is “a cluster of assumptions, beliefs, theories, methods, and applications which taken together make up an interdependent network of commitments”. De Vries (1985: 96) refers to the broader definition that the concept of paradigms has in Kuhn’s work:

This is the primary meaning of the expression ‘paradigm’ in the work of Kuhn: an exemplary, representative example. In The Structure of Scientific Revolutions the expression has gained a broader meaning. That’s where the publications in which such representative examples are described for the first time are called ‘paradigms’, referring also to the whole of convictions, symbolic generalizations, metaphysical assumptions and values that a scientist has implicitly embraced, by following these representative examples.

Thus, a paradigm is an accepted pattern¹⁹ that defines reality for the actors in a specific scientific, societal or policy domain. A paradigm “helps delineate and justify existing roles, organizations, skills, and technologies” (Burke, 1979: 34). These paradigms “replace one another without improving their predecessors” (Rosenberg, 1988: 13). This suggests that paradigms may exist along side each other, making communication between actors who are immersed in and act upon them a continuous challenge.

A *policy* paradigm can then be defined as the existing values and standards on which authoritative relations, rules, and routines are grounded (cf. Alink, 2006). Policy paradigms

¹⁹ See also: Merriam-Webster Online Dictionary (2008): 1) example, pattern; *especially*: an outstandingly clear or typical example or archetype; 2) an example of a conjugation or declension showing a word in all its inflectional forms; 3) a philosophical and theoretical framework of a scientific school or discipline within which theories, laws, and generalizations and the experiments performed in support of them are formulated; *broadly*: a philosophical or theoretical framework of any kind. Retrieved December 23, 2008, from <http://www.merriam-webster.com/dictionary/paradigm>.

are then clusters of assumptions, beliefs, theories, methods and applications, which taken together make up an interdependent network of commitments to guide policy processes in a specific public policy domain (cf. Burke, 1979). Policy regimes are the expression of such clusters or patterns, in terms of policy objectives, measures, resources, institutional arrangements, and power distributions that both characterize and shape a specific policy domain. A shift in a policy paradigm is described by Hall (1993: 284) as “a radical shift in the hierarchy of goals and set of instruments employed to guide policy”. Thus, a shift in the policy paradigm changes the existing policy regime. The deliberate effort to change the existing policy regime is what I define as public policy innovation. To substantiate this ‘definition’ I must make one important remark. As indicated earlier, innovation is a reciprocal concept in the sense that it is both a process as well as the outcome of this process (cf. WRR, 2008). Thus, public policy innovation should follow a shift in the existing policy paradigm and is aimed at substantiating a corresponding new policy regime. Therefore, innovation that is deliberately initiated by a public policy actor, for example through an innovation program, should, in my view, be solely directed at substantiating this corresponding new policy regime. In other words, it should be aimed at thinking outside the box of the existing policy regime. If it is foreseen that the existing policy regime stays in tact, then we should not speak of public policy innovation but of normal policy-making.

In Section 1.2.2 I explained that it is commonly perceived that water management in the Netherlands is undergoing a so-called ‘paradigm shift’. This paradigm shift encompasses the change from a (purely) technical to a (more) spatial orientation with regard to tackling (future) water-related problems. The term paradigm shift is used to indicate the need for a dramatic and fundamental change in the existing policy regime.

The next two questions are: what induces the need for changing the existing policy paradigm? And, why do public policy actors perceive a paradigm shift? I argue that this is often inspired by an anticipated or perceived decrease in effectiveness and/or efficiency in the existing policy regime with regard to expected or experienced changes in society. These changes are driven by perceived changes in social preferences or values²⁰. Values are often used to express social preferences (Foote, 1992: 14). Changing social preferences puts the effectiveness and efficiency of existing policy regimes under pressure, eventually inducing public policy actors to change their network of commitments. For example, the changed societal preference to act on the perceived impacts of climate change encourage public policy actors to review the effectiveness of the existing policy regime in water management. In WB 21 water managing authorities concluded that an alternative way of dealing with water had

20 To avoid discussions about the inescapable nature and validity of external developments, including currently popular trends like climate change and ageing of the population, I argue that the inducement to deal with these developments (e.g. through policy) are mere expressions of changing social preferences or values.

become necessary, resulting in the need to initiate a new policy regime with the so-called Nationaal Bestuursakkoord Water²¹. The deliberate effort of replacing the old routines in order to be successful in the new policy regime (cf. Brandsen, 2004) is currently in progress and characterizes the process of public policy innovation in water management²².

Hence, the decisive difference between public policy innovation and normal policy-making can be explained by the perceived necessity for changing the existing policy paradigm and subsequent regime(s) in order to deal with changes in societal preferences. The significant difference is whether the innovation is induced by the deliberate change, and eventual replacement of the existing policy paradigm or that it is directed at initiating changes within the existing policy paradigm with no (deliberate) objective to change or replace it. I argue that change within an existing policy paradigm must not be described as public policy innovation because it does not differ from ongoing policy-making processes²³. This argument does not imply that normal policy-making processes are not capable of delivering innovation. Of course they can, and this innovation does not have to be restricted to changes within the existing policy regime. Changes through 'normal' policy-making processes may end up in a shift in policy paradigm as well, but through an accidental rather than a deliberate effort. The mere argument here is that when one resorts to initiating an innovation program, it should be directed at changing the existing policy regime, following an anticipated or desired shift in the policy paradigm. There must be a grounded conviction and/or historic evidence that

21 Het NBW is gesloten tussen de vertegenwoordigende organisaties van de vier bestuurslagen in het Nederlandse waterbeheer: het ministerie van V&W, het InterProvinciaal Overleg (IPO), de Vereniging van Nederlandse Gemeenten (VNG) en de Unie van Waterschappen (UvW).

22 Another example is the new health care system that was introduced in 2006. A new policy regime became necessary under the changed societal preference to deal with the perceived overburdening of the existing health care system that, among other reasons, was caused by the increased ageing of the population. The deliberate transformation of the existing health care system into a (more) market-oriented system can be perceived as public policy innovation. The abolished distinction between ziekenfonds (National Health Service) and private insurance changed the existing policy regime. New policy artefacts (objectives, measures, and resources) were put in place, and are still under construction, as well as alternative institutional arrangements between actors involved. See: http://www.rivm.nl/vtv/object_document/o7802n34424.html. Retrieved December 12, 2008. Graafmans, W.C., Berg M.J. van den, en Koolman A.H.E. Wat verstaan we onder marktwerking in de gezondheidszorg? In: *Zorgbalans 2008*. Bilthoven: RIVM, <<http://www.gezondheidszorgbalans.nl>> Verbindende thema's\ Effecten stelselwijziging, 9 december 2008.

23 We must acknowledge that multiple policy regimes can exist along side each other. We see this everyday in the domain of water management. The introduction of the concept of integrated water resources management (mid 80s) does not mean that the old-fashioned sectoral approach to water management has been completely erased from the scene. Nor has the described shift in the policy paradigm, introduced by WB21 (see Section 1.2), been fully translated into a different policy regime yet. The 'old' regime is still partially in place because they address specific societal needs. However, I argue that if public policy actors deliberately desire to initiate public policy innovation, then this should be directed at the new policy paradigm; changes and renewal for the optimalization of the (artefacts of the) existing policy regime, is normal policy-making.

normal policy processes will not be capable of delivering the desired change²⁴. In addition, there must be a conviction that (public policy) innovation can be deliberately staged.

This is no common conviction. Some authors have indicated that innovation has an accidental nature because it emerges in practice (see Orr, 1996; Brown & Duguid, 1991). The conviction that public policy innovation can be staged legitimizes the deliberate and extraordinary organization of change in an innovation program. Such a program is separately initiated and facilitated from formal organizational entities or processes. If this is not convincingly the case, then change should be left to policy-makers, without the need for appointing innovators. In my opinion the driving question behind public policy innovation should be how the new policy paradigm may be substantiated and operationalized in a cluster of new policy artefacts that will constitute a new policy regime. And I am not sure whether this question has been thought through by those who are responsible for initiating innovation programs in the public policy domain, such as WINN. This inevitably may result in the situation that the innovation program exceeds its field of competence by invading that of a policy department (see also Section 4.8.3).

4.8.2

THE RECIPROCAL NATURE OF PUBLIC POLICY INNOVATION

Public policy innovation is no one-dimensional activity in the sense that it aims at renewing one specific artefact of the existing regime in a public policy domain. On the contrary, public policy innovation can be directed at changing diverging artefacts: societal perceptions, values and standards, the ‘virtues of good government’, vocabularies, institutions and their arrangements, technologies²⁵, policy objectives and public services, policy measures and resources, and techniques for management and control. As indicated by WRR (2008; see Section 4.7), the peculiar thing is that changing these artefacts as an objective of public policy innovation can turn out to be a driver for innovation in the entire regime of that specific public policy domain. Changes in one of the policy artefacts may stimulate changes in others, eventually changing the existing policy regime as a whole.

Public policy innovation may be directed at changing existing policy artefacts mentioned above, but in turn, changing (one of) these artefacts may be a driver for innovation in the

24 And measured by the (increasing) number of ‘innovation programs’ which currently crowd the physical-spatial science/policy domain in the Netherlands, this is apparently so. Programs like Leven-met-Water, Habiforum, Ruimte voor Geo-informatie, Kennis voor Klimaat, Transforum, Transumo and the Innovatie-Platform’s working group Water, all try to come up with novel concepts and technologies to ‘solve’ today’s problems in the physical-spatial domain. Most of these programs are funded through the Bsik-regulation (Besluit Subsidies Investerings Kennisinfrastuctuur).

25 Technologies are perhaps a somewhat peculiar object of public policy innovation because they are largely conceived outside the public domain. However, technologies have the power to change the public policy domain, leading to new meanings and relationships among policy actors. A prominent example is the development of information and communication technology, but also in the past new technologies have reformed (institutional) arrangements in the public policy domain (see e.g. Hargadon & Douglas, 2001).

public policy domain. Thus, the concept of public policy innovation has a reciprocal nature: it refers to the change *process* that is initiated by changing one (or more) of the aforementioned artefacts as well as referring to its *outcome*, that is, change in (one of) these artefacts. For example, a seemingly harmless new health care technique, embryo selection²⁶, turned out to have far-reaching ethical consequences, inducing politicians to take positions and express their preferences on whether to allow this technique or not and, if so, under what circumstances. The expressed political preferences are very well capable of altering the existing policy regime in which actors are acting, thus leading to innovation in policy objectives, resources and management techniques. In turn, the political preferences themselves may be ‘innovated’ along changing societal preferences and public opinions that are triggered by media attention and public debate.

The altered societal perception of the changes in the global climate is another example of the reciprocal nature of objects for public policy innovation. The common acknowledgment that man, at least partially, has contributed to the global climate change gives rise to a revision of the principle guidelines on which policy-making and implementation are grounded in many public policy domains, such as water management (see Section 1.2.2). The revised policy regime should ‘trickle down’ to the aforementioned policy artefacts, such as policy objectives and measures, and may even reinforce changing public opinion²⁷ and societal preferences.

When we look back at Chapter 1, the introduction of integrated water resources management did not result in a paradigm shift because the network of commitments or the cluster of assumptions and beliefs stayed in tact: blocking water as a guideline for keeping our feet dry remained the key principle in water management. However, the introduction of WB21 can be seen as a shift of the existing policy paradigm because the cluster of existing assumptions and beliefs was abandoned: instead of resorting to well-known technologies, the current ambition is to solve water challenges with ‘spatial solutions’. This ambition alters the existing cluster of assumptions and beliefs.

These examples indicate that the process of changing the aforementioned artefacts is simultaneously the cause and effect of public policy innovation. Moreover, public policy innovation may be perceived as a self-referential concept. Merely speaking of the need for change

26 This technique was implemented on an experimental basis but, after being recently formally sanctioned by the responsible administrator, came under renewed criticism and scrutiny from Cabinet and Parliament members. This led to much media attention (Summer 2008), igniting the debate in political circles. After awhile, the political debate was settled, and everyone more or less returned to business as usual. But it is not hard to imagine that this could have resulted in new political preferences that might have induced a realignment of the existing policy regime.

27 In retrospect, Al Gore’s efforts with regard to fighting the climate change phenomenon may be perceived as mere sense-making; the actual interpretation and translation of the new meanings for a new policy regime, is still in progress.

or innovation in a specific public policy domain triggers all kinds of responses by public policy actors anticipating the intended or initiated change.

4.8.3

DIFFICULTIES WITH THE CONCEPT OF PUBLIC POLICY INNOVATION

The implementation of a new policy paradigm is no easy task. There are many difficulties to expect. The new policy paradigm is translated into a new policy regime, consisting of a (more or less) coherent regime or cluster of alternative policy artefacts such as objectives, measures, resources and knowledge.

The first difficulty arises when the new policy artefacts have to replace the existing policy regime, practices and their underlying knowledge assumptions. Brandsen (2004) indicates that most public policy actors are not equipped to accommodate innovation. On the contrary, he argues, actors in the public domain tend to “institutionalize activities for the sake of efficiency, exactly so as to avoid unnecessary cost and efforts” (Ibid., p. 39). Public policy actors are likely to be reluctant towards innovation and will only resort to it when they have to²⁸. One of the consequences is that innovation has an essentially difficult relationship with the process of policy-making and implementation and its constituting actors. The virtues of good government that public policy actors should endorse and represent in their governing efforts, in order to be appreciated by its citizenry – legitimacy, predictability, reliability, accuracy, accountability and prudence – may become obsolete, or at least will become unsettled, when public policy actors engage in innovation.

The second difficulty is the acknowledgment that, at least in many cases, innovation is wasteful²⁹ because it requires many (public) resources without knowing beforehand what the return on investment will be. However, wasting public resources (i.e. tax payers’ money) is not preferable. This makes innovation even more difficult for public policy actors. They have to balance between maintaining their accountability and reliability on one side, and advancing their problem solving capacity for societal issues on the other.

This difficulty is furthered by the observation that the objectives of public funding programs and their constituent public actors are often at odds with the *ad hoc* character of initiatives to (public-private) innovation. Laws (2006: 354) argues that “requiring these initiatives to meet standardized categories and guidelines either creates burdens at difficult times or makes funding so unwieldy that it is not pursued, even if it is invaluable”. Public actors must find ways to allocate public funds to foster innovation initiatives without violating the virtues of good government. They need to attempt to do so by providing transparency and accountability for their innovation efforts. Laws thinks that accountability will become an

28 Perhaps innovation is essentially difficult for most types of organizations.

29 A popular phrase of my TNO-colleague, Dr. Carlos Montalvo Corral.

inevitable component of organizing innovation across public-private boundaries because it "...may provide new insights into how to provide accountability by tying evaluation of action to deliberation about shared expectations and the common good" (Ibid., p. 354). Network actors will (have to) get used to continuous strategic efforts to renew consensus and improve network co-ordination by interactively shaping expectations. Thus, the management of expectations in public-private networks engaged in innovation includes continuous deliberation about the virtues of good government that should be represented by public policy actors. When these processes of deliberation come into being, "boundaries between policy, institutions, and innovation are blurred" (Ibid., p. 355).

Both 'difficulties' culminate in a third one, that of the legitimacy of initiated public policy innovation process. If the public policy domain and its constituting actors are essentially reluctant to renewal and change, and the return-on-investment of the innovation resources is even doubtful beforehand, one can imagine that the processes of public policy innovation will be continuously scrutinized. This means that the legitimacy issue is an inextricable aspect of public policy innovation. Actors engaged in public policy innovation should be capable of providing a sound explanation that innovation is necessary to pursue the common good. They must be capable of arguing that, without the intended innovation program, the desired shift in the policy paradigm cannot be reached. And as a consequence, society would be in serious trouble because it would be unprepared for changes in the external environment. This means that actors engaged in public policy innovation must have their story ready at all times, and once in a while show tangible results in order to 'prove' that public resources provided for the innovation efforts are being well spent (see also Section 4.8.5).

4.8.4

THE HYBRID CONTEXT OF PUBLIC POLICY INNOVATION

In the preceding paragraphs the consequences for policy analysis and governance in the 'networked, fragmented domain' have been sufficiently discussed. We can safely argue that this fragmentation is an important driver for the increasing hybrid nature of the public policy domain. This persuades actors to cross public and private boundaries in their attempt to meet the changing demands and preferences with regard to public functions. The aforementioned deliberations by Chesbrough, Brandsen, and Laws refer to the organizational consequences for the innovation landscape. It is obvious that characteristics of the information age and the network society have strong repercussions for the way public policy innovation is organized. Cabral (1998) indicates that innovation, if only temporarily, changes the relationships between actors in a network, e.g. through changes in the costs of transaction between them. Innovation in networks can be pursued through two collective strategies (cf. Brandsen, 2004): dissemination and cooperation. How do these collective innovation processes relate to the organizational landscape of the public policy domain?

I argue that collaborative processes of public policy innovation contribute to and benefit from the hybridization of the organizational landscape, through new and unpredictable connections between public and private actors that are developed in the pursuit of societal preferences. Borys and Jemison (1989: 235) define hybridity as “organizational arrangements that use resources and/or governance structures from more than one existing organization”. Following In ’t Veld (1997), Van Twist (2006: 389) defines hybrid organizations as “organizations in which diverging organizational types, value orientations, activity patterns, and subcultures are blended”. Van Twist continues by arguing that this blending refers to the emergence of connections and interrelations that are ‘strange’ or ‘different’ from the usual internal environment of the organizations involved. Public-private cooperation or arrangements are good examples of hybridity in the public policy domain, next to private organizations performing public tasks, or public organizations that are involved in private tasks (cf. In ’t Veld, 1997).

Van Twist (Ibid.) advocates that the hybrid character of the organizational landscape in the public policy domain facilitates the possibilities of shaping innovation across organizational boundaries. Actors involved have already become familiar with other each and have developed a capacity for (successful) cooperation. Now the question is what this ‘hybridity’, both intra- and inter-organizational, means for public policy innovation. Van Twist (2006: 389) thinks that public policy innovation is stimulated by the ongoing hybridity in the public policy domain, by arguing that “innovation does not seldom materialize in connections that were not obvious beforehand, but were appreciated as logical and novel in retrospect”. Stimulating innovation requires the capacity for network development and the formation of horizontal public-private alliances. Through engaging in new alliances and coalitions in which public functions are combined, new opportunities emerge for qualitative and quantitative improvement of public services (cf. Van der Heijden, 2005). Brown and Duguid (2002: 435) embrace this idea in their study of innovative regions by claiming that “the underlying insight that innovation is not a pure and abstract art, but a combinatorial one, opens new possibilities for more conventional regions too. Here it is possible to bring together new and old, the unprecedented and the established, into promising new combinations”. Sometimes technological improvements are needed to combine public functions and/or make more extensive use of the existing capacity of network actors. However, in many cases, innovation simultaneously thrives on and materializes in unexpected and novel connections between the ‘usual suspects’, i.e. policy network actors who have a long history of cooperation but still manage to connect in new ways when collaboratively taking on a new (societal) problem. The capability to establish novel connections contributes to an organization’s capacity to innovate. These new connections are capable of (re-)combining one-dimensional public functions without large technological advancements. Van Twist (2006) gives some examples

of the innovative value of the new connections. These examples have a strong reference to the concept of isomorphism (see: DiMaggio & Powell, 1991).

4.8.5

ORGANIZING PUBLIC POLICY INNOVATION IN THE HYBRID PUBLIC POLICY DOMAIN

Innovation literature often refers to two strategies along which innovation is organized: exploration and exploitation (WRR, 2008; Gilsing & Nooteboom, 2005). According to the WRR (2008: 39), exploitation refers to “the application and improvement of new ideas, principles, concepts, or logic”, whereas exploration refers to “the process in which these emerge”. The WRR (Ibid., p. 110) indicates that both dynamics are necessary in innovation systems, but they can be mutually counterproductive because of their specific needs and characteristics. I argue that public policy innovation incorporates both processes. The process of exploration is passed through during the conception of a new policy paradigm, whereas the exploitation process refers to the translation of the new policy paradigm into an alternative policy regime and its constituent policy artefacts.

When policy network actors initiate innovation, Brandsen (2004: 40-42) indicates that they have three ways of organizing it: 1) autonomous innovation, 2) innovation through cooperation, and 3) innovation through dissemination. The first option has an individual, unilateral locus, whereas the other two are of a collective nature. Because of the networked and participatory nature of today’s practice of policy analysis (including innovation), only the collective ways of conduct concern us here. This does not mean that public policy innovation cannot be initiated through a unilateral, hierarchical process. But I argue that public policy innovation has an essentially participatory nature. This does not imply that it must be initiated or conceived in bottom-up and collaborative processes, but merely that its concrete materialization is inevitably participatory because of the networked and hybrid character of the public policy domain³⁰.

Collective innovation through dissemination means that “information is passed on from one actor to another without the former even being aware of it” (Brandsen, 2004: 41). DiMaggio and Powell (1991) have labelled the concept of dissemination as “isomorphism”, describing the emergent forces that promotes similarity between organizations. In policy networks, front runners often acknowledge the need for innovation in an early stage and at the same

30 A recent example is the implementation of the new health insurance system in 2006. This new system was initiated by the ministry of Health, Welfare and Sport, and undoubtedly, conceived after some consultation rounds with representatives from ‘the field of health care’. However, its concrete materialization in insurance policy conditions, criteria for accepting or excluding clients, as well as their implementation, is the subject of continuous negotiation between various policy actors, including the ministry, the insurance companies and their branch organization, the suppliers of health care, and consumers’ and patients’ associations. The reason for this is the necessity of cooperation from the other policy actors for implementation of the new system, thus eventually leading to a participatory process (see also Mayer, 1997).

time, have the capacity to initiate the process of change. Other actors in these networks are likely to follow the initiated change and try to make their routines and practices similar to those of the innovating actor³¹.

Brandsen (2004) describes the preconditions for collective innovation through dissemination by the development of isomorphism. This process does not presuppose mutual dependence to initiate knowledge diffusion. Actors adopt new knowledge, routines and practices from front runners because they are inclined to do so for their survival. There is no need for a mutual and concerted effort in which new knowledge, routines and practices get diffused. Instead, knowledge diffusion is essentially unilateral, from the front-running actor to the 'laggards' in the public policy network. The only prerequisite is that the innovating network actor disposes of or has access to "adequate channels for carrying innovation across inter-organizational boundaries" (Ibid., pp. 46-47). This is also noted by DiMaggio and Powell (1991: 77) who claim that "fields that have stable and broadly acknowledged centres, peripheries, and status orders will be more homogeneous both because the diffusion structure for new models and norms is more routine and because the level of interaction among organizations in the field is higher".

Innovation through dissemination is a more or less controlled way of innovation because the other actors do not have a significant say in the objectives and resources of the intended innovation. In my opinion, this process is a matter of following the principal policy actor, rather than a deliberative, goal-seeking process of development and change. This type of innovation is likely to leave institutions in tact, and takes place in a relatively stable and analyzable environment (cf. Daft & Weick, 1984). I argue that innovation through dissemination is nothing more than business as usual, following the standard, hierarchical procedures of policy-making. Von Hippel (1988) and Barley (1988) point out that innovation is not always radical. Incremental improvements occur throughout an innovative organization.

However, with the foregoing deliberations in mind, we might conclude that this type of collective innovation is a form of normal policy-making because it is likely to be restricted to the existing policy paradigm.

Collective innovation through cooperation implies that "in a process of close cooperation, actors may reach joint decisions that are innovative in nature" (Brandsen, 2004: 40). Decision-making in so-called corporate structures involves interaction between a small number

31 DiMaggio and Powell (1991) argue that these processes of achieving similarity between organizations in networks can be characterized by three types of "isomorphism": through imitation ("mimetic isomorphism"), shared norms and values ("normative isomorphism") and force ("coercive isomorphism"). These types are present in the public policy domain as well, although the latter is perhaps most visible to the general public. When a public policy actor changes its policy directives, the policy network of which it is part is likely to follow these new directives in order to stay in business. Examples are quality directives (following new ISO-norms), directives for tendering procedures (following new EU-directives) and directives for eco-efficiency (following new policies for CO₂-reduction).

of actors, allowing them to become more familiar with each other, create shared understandings and build a relationship of trust. In market structures, collective innovation through cooperation occurs because of cost benefits and risk management. Returns on research are uncertain while considerable resources are required that exceed the single actor's financial capacity. Innovation, therefore, can only be achieved by sharing risks and pooling resources. Based on Powell et al. (1996), Brandsen (2004: 40) describes the nature of these innovation alliances as follows: "In these networks, where know-how is shared, familiarity and a reputation of trustworthiness are extremely valuable assets".

Brandsen (2004) identifies the preconditions for collective innovation through cooperation. This process will only occur when actors believe they can benefit from each other. If actors think that the potential benefits of cooperation will exceed their expected effort (costs), they will be ready to engage in mutual action that is more or less based on equality. This suggests that "innovation through cooperation therefore rests upon a degree of mutual dependence and symmetry in the resources of the actors involved" (Brandsen, 2004: 46; cf. Streeck & Schmitter, 1985). Collective innovation through cooperation is most likely in the societal or market areas where interdependence is highest, provided that an actor's natural response to reducing its dependency is not successful. Brandsen (Ibid., p. 46) argues that an actor's "attempts to diminish dependence will also diminish the chances that collective innovation through cooperation will occur, because this requires sustained interaction". This refers to the fact that actors can actually benefit from what Streeck (1997) calls "productive constraints" that encourage them to interact on a sustainable basis.

Innovation through cooperation, however, leaves more 'degrees of freedom' open to participating actors. They participate, more or less voluntarily, in exploratory processes for collective problem definitions, shared understanding of which way to go, and gathering or compiling resources in order to build a collective innovation capacity. This is in line with Laws' (2006) observation that the network is the capacity for innovation. The outcomes of such a deliberative and goal-seeking process cannot be known beforehand because each of the participating actors will strive for an optimal accommodation of its interests, leading to an unsettled process, to say the least. This type of process is likely to take place in a dynamic, unanalyzable environment (cf. Daft & Weick, 1984) and may lead to a change in the institutional landscape, or even provoke a policy paradigm shift. In light of the foregoing distinction between public policy innovation and 'normal' public policy-making, we might conclude that this innovation strategy is capable of changing the existing policy paradigm, and therefore might result in what I have called public policy innovation.

A cooperative strategy to public policy innovation is closely related to the constructivist and strategic motives for participatory policy analysis (see Sections 4.5.3 and 4.5.4). In a collaborative effort, policy network actors make a construct of the (societal) problem at hand, the potential innovation as a problem-solving strategy, and the required resources. The strategic argument for participation in public policy innovation lies in the acknowledgment

that cooperation between autonomous yet interdependent actors is necessary because they themselves cannot solve a problem single-handedly (cf. Mayer, 1997).

4.8.6

UNDERSTANDING PUBLIC POLICY PARADIGMS: CHANGING RHETORICAL AND ACTION FRAMES

The question now is how a changed policy paradigm is translated into a new, alternative policy regime. To conceive a new policy paradigm is one thing, to operationalize this paradigm into a new policy regime is another. What does the policy paradigm mean? How should we interpret it? How do the other public policy actors interpret it? How can it be (best) translated into policy objectives, measures and instruments? These questions alone indicate that public policy innovation, as a specific form of policy analysis, is deliberative activity and not a rationalist process. Therefore I argue that the effort that is undertaken to give *meaning* to the new policy paradigm can be understood by looking at the types of frames they reside under.

The concept of frames has been introduced by the psychologist Ervin Goffman who defines them as follows: “I assume that definitions of a situation are built up in accordance with principles of organization which govern events – at least social ones – and our subjective involvement in them; frame is the word I use to refer to such of these basic elements as I am able to identify” (1974: 10-11, quoted by Hazelrigg, 1992). Frames can be perceived as schemes of interpretation, through which (groups of) individuals give meaning, organize experiences and inform actions. Gitlin (1980: 6) defines frames as “principles of selection, emphasis, and presentation composed of little tacit theories about what exists, what happens, and what matters”. Hazelrigg (1992: 241) indicates that frames and frame analysis are self-referential, indicating that a “frame is like environment or language: any actor is always in and of one, although (s)he may seldom thematize it as such”.

The concept of frames has been translated into the public policy domain and into policy analysis by Schön and Rein in their book Frame Reflection (1994). They perceive policy frames as “the assumptional structures held by participants in the forums of policy discourse and by actors in policy-making arenas” (p. vii). They distinguish two types of frames that are, in my opinion, relevant for understanding how public policy innovation might work in real life: rhetorical and action frames. Schön and Rein (Ibid., p. 32) refer to these frames as follows:

We distinguish between rhetorical and action frames. By the former we mean frames that underlie the persuasive use of story and argument in policy debate; by the latter, frames that inform policy practice. Sometimes the same frames serve both functions. More often, frames implicit in the language used to win the allegiance of large groups of people differ from the frames implicit in the agreements that determine the content of laws, regulations, and procedures.

Rhetorical frames refer to the activities that are concerned with policy-making, including the articulation of political preferences and (scientific) research on behalf of policy analysis. Action frames refer to the activities that are concerned with policy implementation, including the application of policy instruments and the allocation of resources. The 'definitions' of these two types of frames tend to capture the widely distributed divide³² between thinking and acting (Schön & Rein refer to Ahrendt's ideas on this division); between policy-making as mental activity, and policy implementation as conative activity.

Why do I think that these frames are relevant? I argue that both frames accurately capture the actual practice of conducting public policy innovation. The rhetorical frame refers to the narrative, argumentative, and dialectical aspect of public policy innovation that is manifest in continuous debates about how to interpret and explain the new policy paradigm. The dialectical aspect of the rhetoric frame becomes manifest in the continuous exchange of propositions and suggestions with which renewal in a specific public policy domain, such as the perceived need for innovation in water management, is explored and assessed. In my view, public policy innovation is characterized by public debates between representatives of public policy actors, such as public policy agencies, knowledge institutions, private sector firms, NGOs and special interest groups, and the general public. With rhetoric, in TV interviews, newspaper articles or yet another explorative research report, the contours of a new policy regime that is developed to translate the policy paradigm are explored, defined and redefined among the actors in the public policy network. In addition, the rhetorical frame refers to the necessity of supporting the legitimacy of the innovation process by providing a sound story (see also Section 4.8.2).

The action frame of public policy innovation becomes manifest in experiential behavior in the public policy domain. The new policy regime is explored through policy experiments, pilot projects and temporal resources³³ for new initiatives and/or organizations. Through provisional efforts, in the (interpreted) spirit of the new policy paradigm, new policy artefacts that will constitute the new policy regime are tried out. With pilot projects, new policy instruments and measures that represent the desired shift in policy paradigm can be pre-tested and evaluated, before being 'formally' implemented. A favorable side effect of the action frame is that it can deliver tangible results of the innovation process as a means of emphasizing its legitimacy (see also Section 4.8.2).

32 This divide is also visible in the organizational context of this study's case, the ministry of Public Works, Transport and Water Management. With regard to the ministry, it has divided policy-making (thinking) and policy implementation (acting) into two separate Directorates-General, subsequently the DG Water and the DG RWS.

33 Most of these temporal resources are of a financial or organizational nature, such as an incentive policy that funds incentive programs.

As indicated by Schön and Rein, sometimes the same frames serve both functions, suggesting that the relationship between them is essentially difficult because they cannot convincingly be separated. The action frame may be activated or ‘played’ by implementing a so-called pilot project, merely to start a public debate on the desirability or acceptability of a certain policy artefact that may substantiate the new policy regime. In turn, merely resorting to rhetoric by speaking about a potential alternative policy artefact in public may be capable of inspiring action(s) of all kinds (think of demonstration projects or quick scan research) to indicate whether the debated policy artefact is capable of and acceptable for substantiating the new policy regime. In my view, both frames are highly intertwined and only distinctive for analytical purposes.

To summarize, the actual practice of public policy innovation is composed of narration, the rhetorical frame in public policy innovation, and experimentation, the action frame in public policy innovation. Applying both frames enables public policy actors to make sense of the new policy paradigm and may be perceived as an operationalization of public policy innovation. Efforts in both frames are developed to interpret the self-induced shift in policy paradigm. We see both frames operating every day in an effort to make sense of the new policy paradigm in water management. The rhetorical frame is recognizable in public debate and discussion about the way the Dutch water management sector should interpret the new challenges in this policy domain. Experimentation is manifest in pilot projects which show tangible results for new techniques with which the challenges in water management can be met. The practice in the WINN program of conceiving of and organizing innovation in water management (see Section 1.6.4) connects to two types of frames. Both frames and their reference to the innovation practice in WINN will be further elaborated on in Section 5.5.2.

4.8.7

PUBLIC POLICY INNOVATION AS AN ORGANIZATIONAL STRATEGY OF ENACTMENT

The effort of public policy innovation in both frames described above may be perceived as a process of collaborative sense-making (cf. Weick, et al., 2005) among network actors. This process has strategic consequences because it may reveal which actors can contribute to the intended innovation and under what conditions. Daft and Weick (1984) and Weick (1995) advocate that organizations are about sense-making. Frissen (1989: 67) argues that “organizations are the product of sense-making processes, they contribute extensively to sensemaking and they themselves are a meaningful, coherent entity of sensemaking”.

Organizations are continually interpreting the dynamics in their external environments, whether to be able to follow new consumer needs or to meet societal preferences. For their idea of interpretative innovation, Brown and Duguid (1991: 51) refer to Daft and Weick’s (1984) discussion on the matter. I argue that public policy innovation perceived as a process

of changing the existing policy regime has a strong relationship to the actors' capacity of analyzing and interpreting their environment. Earlier I argued that a desired shift in policy paradigm is largely induced by perceived changes in the societal environment of public policy actors. This assumption presupposes the capacity of these actors to access and interpret these changes.

Following up on this chapter's argument, it is relevant to examine the relationship between innovation activities and the organizational strategy. When organizations engage in public policy innovation, something happens to their existing relationships with their environment. The American Heritage Dictionary definition of innovation earlier quoted in this chapter, 'the act of introducing something new', tends to refer to an entity, often an organization, striving to introduce a novelty into its (societal or market) environment. This means that organizations must be capable of employing a certain strategy in order to meddle in their environment in a purposeful way. When we then recall the concept of reflexivity, it is clear that the environment to which the novelty is introduced will 'talk back', thus revealing valuable information to the initiating organization. An organization's capacity to analyze, interpret and initiate these dynamics in their environment is described through Daft and Weick's strategies of discovery and enactment (1984). I argue that these strategies also apply to inter-organizational networks, simply because they are constituted by organizations that have a meaningful and dynamic relationship with each other. When one of the actors in the network changes its ways, the others will have to adapt to its strategy.

Based on two capacities, assumptions about the environment and organizational intrusiveness, Daft and Weick (1984: 288-289) distinguish four types of interpretation modes performed by organizations³⁴: undirected viewing, conditioned viewing, discovering, and enacting; each of which refers to the organization's relationship to its environment.

Assumptions about environment	Organizational intrusiveness		
		Passive	Active
	Unanalyzable	Undirected viewing	Enacting
Analyzable	Conditioned viewing	Discovering	

Table 3 Daft and Weick's Model of Organizational Interpretation Modes (1984)

34 Note that Daft and Weick tend to attribute these strategic capacities to management. However we can safely question whether this assumed attribution is correct, certainly in so-called 'professional organizations', such as knowledge institutes, universities and (engineering) consultancies.

Brown and Duguid (1991) argue that these interpretation modes explain the organization's capacity and attitude toward innovation. Only the 'discovering' and 'enacting' strategies (or modes) will be discussed here because they presuppose an *active* 'intrusion' (through public policy innovation) into the environment in an attempt to deal with its dynamics. And remember, innovation is referred to as an activity (cf. WRR, 2008; Brandsen, 2004). The difference between the two strategies is that 'discovering' presupposes that the organization is capable of analyzing its environment because of its stability and predictability. Enacting presumes that the organization is not capable of analyzing the environment because of its instability and unpredictability. Hence, the latter innovation strategy attempts to make sense of an unknown environment. The discovering organization is the archetype of the conventional innovative organization. This type of organization responds to changes in its environment by presupposing "an essentially pre-structured environment and implicitly assuming that there is a correct response to any condition it discovers there. By contrast, the enacting organization is pro-active and highly interpretive" (Brown & Duguid, 1991: 51). Not only does it respond to its environment, but it also creates many of the conditions to which it must respond. Daft and Weick (1984: 288) describe enacting organizations as follows:

These organizations construct their own environments. They gather information by trying new behaviors and seeing what happens. They experiment, test and stimulate, and they ignore precedents, rules and traditional expectations.

Innovation, in this view, is not simply a response to empirical observations of the environment. The source of innovation lies in the interface between an organization and its environment. Innovation involves actively constructing a conceptual framework, imposing it on the environment, and reflecting on the interaction between these entities. An enacting organization must be capable of reconceptualizing its environment and, therefore, its own identity because these concepts are mutually constitutive (cf. Brown & Duguid, 1991). Again, 'reconceptualization' is what innovative actors are continually doing. Under pressure of an altered perception of the external dynamics, they redesign the organization's identity, being able to let go of business as usual. Enacting organizations are tied up in a continuous search for alternative ways to impose new structure, develop new perspectives and thus, reinvent themselves (cf. Brown & Duguid, 1991). These search processes may result in different and novel answers because with each idiosyncratic combination of environment and organization, these entities tend to reconstitute each other. And as these searches take place in networks, the actors involved will inevitably engage in collaborative processes of interpretation of what is going on.

Public policy innovation may be perceived as a process of joint interpretation. Enacting organizations, acknowledging that their environment is not a given, can potentially adopt

new viewpoints, allowing them to “see beyond the closure-imposing constraints of a single world view” (Ibid., p. 52) or, as Schön and Rein (1994) would suggest, beyond the existing policy frame. These organizations are capable of changing existing policy paradigms and are, at the same time, responsive to changes in them. Daft and Weick (1984) argue that interpretation can shape the environment more than the environment shapes the interpretation. It is the process of reframing (cf. Laws & Rein, 2003) through which organizations can see themselves anew and overcome discontinuities between their environment and their functional structure. Brown and Duguid (1991: 53) argue that “enacting and innovating can be conceived of as at root sense-making, congruence-seeking, identity-building activities of the sort engaged in by workers”.

I propose to adopt Daft and Weick’s interpretative mode of enacting as strategy for translating the changed policy paradigm into an alternative policy regime. This proposition is based on their dimensions for identifying organizations’ capacities to intrude on their environment. It is perhaps inane³⁵, but like innovation, enactment is also a reciprocal concept. An enacting strategy is capable of initiating the quest that may eventually result in a new policy paradigm and, at the same time, of operationalizing the interpretive process, following the shift in the policy paradigm. I argue that enactment is a productive strategy for initiating as well as interpreting public policy innovation. As indicated by Laws (2006), interactions between policy, institutions and innovation simultaneously create needs and modes for reflecting on the purposefulness of policy actions, and on our activities of sense-making that ground these actions. Public policy innovation operationalizes the changed policy paradigm through reflection and sense-making. Through posing questions like “Do we (still) do the right things?”, “Does something have to change and if so, what and why exactly?”, an enacting strategy can examine and at the same time, mediate the discrepancies that public policy actors experience as a consequence of this reflection process.

For reflection and sense-making, two presuppositions are vital. First, I presuppose that public policy network actors are capable of significant intrusiveness because they have the opportunity to influence the political and, thus parts of, the societal agenda. Launching ideas for new policies by public policy officials or politicians, even at a very premature stage, almost immediately leads to responses from public policy network partners and from society at large. Releasing ‘trial balloons’³⁶ or launching tentative ideas long before they can show up in policy measures are well-known enacting strategies in the public domain. They provoke reactions, in opposition as well as support, towards the intended policies, thus revealing the playing field: who are the opposing actors and for what reason? Who supports the ideas? For what reason(s) and how? Of course, these enacting strategies are not restricted to public

35 An obvious or even silly comment.

36 In Dutch: proefballonnetjes oplaten. A well known activity for politicians.

policy agencies. All public policy actors tend to be capable of launching new ideas just to find out what the reactions of their network partners would be, thus revealing the opportunities for development and innovation. Almost every day we see examples of private sector firms and knowledge institutes trying to set the political and societal agenda for water management innovation by launching new innovative ideas for, let's say, river basin management or coastal defense. Public policy agencies, such as the DG RWS and the DG Water, are expected to respond to these so-called 'unsolicited proposals', thus revealing their interpretation of how these proposals might substantiate the desired new policy regime. Actors, both public and private, that are capable of creating an intrusive relation with their external environment enter 'the innovation game'. It is obvious that the media landscape stipulates the capacity of intrusiveness of public policy actors. Media channels provide them with the capability of intruding on their environment.

Second, I presuppose that an enacting strategy is suitable for translating the shift into the existing policy paradigm because of its capacity to search for new meanings and purposes in the designated policy domain. Actors, both public and private, engaged in active interpretation of the policy paradigm shift, whether through rhetorical or action frames, or both, enter 'the innovation game'. The enacting mode of interpretation points to an actor's ability to give meaning to the new policy paradigm shift, redefining its regime, routines and practices and, eventually, its institutions. This shift is recognizable in the change process the existing policy regime will engage in, inducing other policy network actors and institutions to respond to the new situation. In this sense, enacting policy actors will inevitably break with the existing policy theories, the set of assumptions underlying a policy regime (cf. Leeuw, 1989), and replace them with new theories of how to deal with the new, self-imposed environment (cf. Brown & Duguid, 1991).

4.9

CLOSING REMARKS AND INTRODUCTION CHAPTER 5

Enactment addresses the continuous search by public policy actors to make sense of the ambiguous and reciprocal nature of (self-induced) public policy innovation. The dynamics in the environment are largely unanalyzable, caused by its contingency, fragmentation, interdependency (see Section 3.6) and capriciousness. What is perceived as a problematic situation today, anticipating policy action, can be solved or less prioritized tomorrow. What is perceived as a durable, stable situation can become unsettled overnight. The fragmented distribution of perceptions, knowledge, resources, interests, and power in the policy network leads to unpredictable, volatile coalitions that activate (parts of) the network in the pursuit of innovation. In addition, contingency and fragmentation simultaneously emerge

in and shape an environment in which ‘everything depends on anything’. Through enactment, public policy actors can make sense of the new policy paradigm collaboratively.

The aforementioned deliberations paint a picture of public policy innovation as a challenge to put together adequate knowledge distributed among network actors, in order to meet new preferences in society. The strategic consequences for this type of collaborative innovation can only be met by individual professionals who are capable of conceiving of and organizing innovation across organizational boundaries, bringing together distributed resources, and bridging diverging interpretations of what is going on. These professionals perform the implementation of the deliberate organizational strategy of enactment. In short, they must be capable of performing the actual practice of doing public policy innovation that can be recognized and understood through rhetorical and action frames. This means that we must examine the concept of practice and the practitioner’s perspective to understand what it takes to conceive of and organize water management innovation in a networked public policy environment. This is done in Chapter 5.

Chapter 5

The Practice of Public Policy Innovation

5.1

INTRODUCTION

As indicated in the introduction of this thesis, I am particularly interested in the individual's perspective on public policy innovation in a networked environment. The deliberations of the previous chapters have to be 'drawn down' to the individual's perspective. In the previous, public policy networks and policy analysis were discussed from a relativist/pragmatist perspective with the objective of avoiding abstract and positivist approaches to these entities. All the abstract notions, 'virtualities' and assumptions about what is going on, must materialize in a tangible concept, something we can grasp and comprehend. The concept of practice may provide this, as casually provisionally indicated in Chapter 1.

5.2

CONNECTING TO THE RELATIVIST/PRAGMATIST INQUIRIES OF CHAPTER 3 AND 4

In this paragraph the characteristics of a relativist/pragmatist inquiry into networks and policy analysis are briefly summarized as stepping stones for explaining the concept of practice as a vehicle for understanding the individual's perspective in the networked activities for policy analysis. Based on the previous chapter, I propose that the mere acknowledgment of the network concept and its consequences for policy analysis tends to be enough reason for re-introducing a relativist/pragmatist perspective on practices of policy analysis. This proposition is endorsed by a short summary of the relativist/pragmatist inquiry into networks and policy analysis.

Contingency: the concept of continuous dynamism

Rorty's concept of contingency (1989) suggests that there is no point in introducing a new meta-entity that meaningfully comprises all other entities. The contingency claim induces us

to move away from believing in or striving for anything that pretends to be true and/or has an intrinsic, lasting nature. The pursuit of connections and involvement, crucial for being able to function and survive in networks, will then always be accompanied by an awareness of their accidental nature (Rorty, 1989). Frissen (1999) then elaborates on this by claiming that variety and chance should be the anchor of public administration and governance. All policy efforts have an essentially temporal relationship with their objects of intervention.

Fragmentation: the reflexivity of organizational life

Our societies and organizational life become more and more fragmented. This fragmentation tendency is largely caused by what Beck, Giddens and Lash (1994) call reflexive modernization. Their concept refers to “the premises of modernity [that] end up in a tangle of unintended consequences, through which modernity gets to contradict itself” (Frissen, 1999: 179). Modernization has advanced in such a detailed and complex manner that this can no longer be controlled or overlooked. Lash (1994) thinks that the grand narratives which are the vehicle of modernity no longer apply because they cannot help us to understand the rising self-created and self-perpetuating complexity. Instead, ‘small narratives’ (Frissen, 1999) rooted in communities are more appropriate because they are able to communicate ‘shared meanings’. Frissen continues with the observation that “those connections are the fragments which derive their meaning, not from any grand narrative but from local practices” (Ibid., p. 180). These practices are rooted in local, personalized communities that are increasingly network-shaped.

Interdependency and embeddedness as central characteristics of networks

Contingency and fragmentation lead to interdependency. Interdependency emerges through the creation and maintenance of connections as the key objective of network activity. As a consequence, being able to connect is vital to organizational survival in networks. Moreover, the inability of one actor governing an entire network is captured by the premises of embeddedness or constitutiveness of both actor and network. Bekkers (1993) speaks of governance that focuses on the boundaries of organizations, and influences the mutual dependencies between these organizations. Steering at interdependencies is especially attractive for dealing with issues of governance in networks environments. After all, interdependency is the key expression of network structures. Granovetter (1985) and Bredo (1994) refer to the concept of embeddedness to indicate the inseparable relationship between different entities, e.g. the relationship between individuals and their social environment.

The conclusion that public policy analysis and innovation are social sciences leads to a relativist/pragmatist view of knowledge that is created and applied in a networked context that constitutes and defines social interaction. The relativist/pragmatist inquiry in policy analysis is derived from the following, though previously discussed, sources.

The renouncement of the idea of the 'Mirror of Nature'

Rorty (1979) abandons the view of philosophy that regards the mind as a mirror of nature. In his view, philosophy is no longer about confrontation of conflicting representations but about conversation between diverse opinions. Knowledge is a matter of conversation and social practice, instead of a series of attempts to represent nature. In this conversation, no one is able to act as a 'supreme court', and there is no meta-practice from which all possible entities of social practice can be criticized.

The fallibilistic nature of social sciences

Fallibilism implies the acknowledgement of the possibility of being wrong, and the willingness to learn from this by reviewing one's assumptions. Hoppe (1998) states that the Cartesian idea of an 'or – or' situation in which knowledge is vested in solid principles of certainty and rationality or becomes subject to 'a relativist swamp of intellectual and moral chaos' is being abandoned. This means that policy practice – as a problem-solving capacity – has an essentially provisional relationship with the problematic situation it was designed for. No problem-solving policy practice has eternal value.

The reflexive nature of social sciences

Reflexivity occurs when the observations and/or interventions of observers and/or intervening actors in the social system influence and change the situation they are observing and/or intervening in. Reflexivity also emerges when a theory is being disseminated to and thus affecting the behavior of the subjects or systems the theory is meant to objectively model or explain. As a consequence, observation and/or interventions are never independent of the participation of the observer or initiator. We could say that 'social systems talk back at researchers or policy analysts who intervene in them while doing research or developing a policy theory'. This means that social systems do not remain untouched during (policy) research activities, but will be influenced by them and change accordingly. In addition, knowledge production changes the empirical reality to which this refers, due to the fact that the produced knowledge is added to reality, and therefore the conditions of its validity are changed (Frissen, 2000).

Public policy analysis and innovation within the relativist/pragmatist perspective can be considered to be what Jasanoff (1990) calls post-normal science. Post-normal science can deal with the renouncement of traditional dichotomies of facts versus values and knowledge versus ignorance. In post-normal science, concepts like negotiated knowledge (cf. Frissen, 1998) and serviceable truth (cf. Jasanoff, 1990) have become metaphors for the relativist/pragmatist way of generating policy-oriented knowledge.

5.3

INTRODUCING THE CONCEPT OF PRACTICE

It is my proposition that the concept of practice accurately captures the turn towards societal participation and deliberation by making explicit use of the network characteristics of policy environments. An important presupposition is that the type of practice that applies here should be practice that is contingent, self-emergent and self-organizing, and has a fallibilistic and reflexive nature. Practices are experience-based iterative courses of action. Practices are negotiated and synchronized while being implemented. Practices start with a certain objective and from a certain perspective and/or interest, but evolve along the way. Practices cannot be comprehensively designed upfront but are iteratively invented and adapted. The practice I refer to in this study is the practice of public policy innovation, i.e. all activities that are carried out to conceive of, formulate, implement and evaluate public policies. Thus, it must be possible to identify pragmatic performance of policy professionals in pursuing public policy innovation in public policy networks. The value of the concept of practice will be argued in the paragraphs below, as a cornerstone for the case description (in Chapter 7) and analysis (in Chapter 8).

5.3.1

DEFINING PRACTICE

Based on several theories about the concept of practice, Wagenaar and Cook (2003) propose the acceptance of a broad perspective on what it takes to perform. They offer the following theoretical perspectives on practice.

The first perspective that they specify is practice as ‘mere doing’. This is based on Comte’s meaning of ‘the capability of acting in the right way’.

The second perspective is practice as ‘habitus’, derived from Bourdieu’s ideas (1990), identifying two aspects: 1) the primacy of (spontaneous) action as a social phenomenon, with its own logic, origins and demands, purposeful but not reducible to the following of rules, and 2) the dialectic between actor and context, in which the social order is constantly reproduced in the course of acting in and upon it.

The third perspective perceives practice as ‘a particular configuration of human activity’. MacIntyre (1981: 187) defines practice as

any coherent and complex form of socially established cooperative human activity through which goods internal to that form of activity are realized in the course of trying to achieve those standards of excellence which are appropriate to, and partially definitive of, that form of activity, with the result that human powers to achieve excellence, and human conceptions of the ends and goods involved are systematically extended.

Wagenaar and Cook (2003: 146) interpret this extensive definition by arguing that it explains the difference between practice and institutional rules and organizational routines. They capture the reciprocal nature of practice by claiming that “entering upon a practice means defining the practice”.

As the fourth perspective, Wagenaar and Cook (2003: 146) describe practices as “constitutive meanings. In this sense, practices are linguistic-performative configurations that constitute social realities”. According to them, the constitutive perspective on practice indicates several aspects. First, practice is broader than an institutionalized configuration of cooperative activity. Second, practices in this sense are public. Knowing and understanding inescapably constitute a public process. People learn about the world in public, shared processes in which they test what they have learned. And third, there is a sophisticated argument about the interconnectedness of language and action. Practices and the language we employ to describe them bring each other into being.

The fifth perspective acknowledges practices as a theory of action or an activity system. Lave (1988: 5) describes practice as “an attempt to deal with the problem of context”. Human action is situated in the material and social worlds which induce us to pay specific attention to the conceptualization of the relationship between the individuals acting and the surrounding environment. Lave argues that actors and their environment stand in a purposeful, dialectical relationship with each other. In trying to solve problems that come up within the course of their everyday work, they improvise with the material, social, and experiential resources at hand. This, of course, refers to the pragmatic nature of practice, indicated in William James’ pragmatic method. James (2005: 52) advocates that

the pragmatic method in such cases is to try to interpret each notion by tracing its respective practical consequences. What difference would it ‘practically’ make to anyone if *this* notion rather than *that* notion were true? If no practical difference whatever can be traced, then the alternatives mean practically the same thing, and all dispute is idle. Whenever a dispute is serious, we ought to be able to show some practical difference that must follow from one side or the other’s being right.

Wagenaar and Cook (2003: 149) propose not to choose from these theoretical perspectives but suggest taking (trying to take) them all into account simultaneously. They argue to approach practice “more open-endedly as part of a theoretical perspective, an understanding of the way people negotiate in a structured and meaningful way the challenges they encounter in life’s course”. For a comprehensive understanding of the concept of practice which converts to the aforementioned definition, Wagenaar and Cook (Ibid.) advocate to include a number of interrelated concepts: “Practice then entails action, community, situatedness, criteria, standards, warrants, knowing, dialectic, discourse, emotions and values”. In my view, practice thus means anything (human) individuals can deploy to perform or to carry out

a task, both individually and collectively, within a certain social environment that constitutes and defines, as well as appreciates, what is achieved. This view captures the pragmatic character of the concept of practice: if individuals think that something else needs to be performed, they will incorporate this into their practice. This emphasizes the changing nature of practice. In addition, I argue that practice is a relativist conception, in the sense that it has developed in a certain way over time but it is by no means a definite or absolute construct. Given different circumstances, the practice at hand could have been developed differently.

5.3.2

CANONICAL PRACTICE: THE LIMITATIONS OF FORMAL TASK DESCRIPTIONS

An interesting angle for discussing the concept of practice is the variance between an organization's formal work descriptions – both in its training programs and manuals – and the actual work practices performed by its workers. Julian Orr's (1996) detailed ethnographic studies of service technicians¹ illustrate how an organization's view of work can overlook and even oppose what and who it takes to get a job done. Inspired by Orr's findings, Brown and Duguid (1991: 41) make the general observation that “reliance on espoused practice (which we refer to as *canonical practice*) can blind an organization's core to the actual, and usually valuable practices of its members (including *non-canonical practices*, such as “work-arounds”). They claim that “it is the actual practices, however, that determine the success or failure of organizations” (Ibid.), in dealing with continuously changing external demands.

In Talking about Machines², Orr (1996) paints a comprehensive portrait of the divergence between espoused and actual practice, of the ways this divergence develops, and of the trouble it can cause. His work provides a detailed description of the way work actually progresses. Orr contrasts his findings with the way the same work is thinly described in the corporation's manuals, training courses, and job descriptions.

Orr's study shows how an organization's ‘prescriptions’ can severely distort its view of the actual work its members carry out. Many organizations are willing to assume that complex tasks can be successfully prescribed and structured into a set of simple, highly specialized canonical steps that can be followed without need of significant understanding or insight. But Orr (1996) shows that actual practice inevitably involves tricky interpolations between abstract accounts and situated demands. Orr's workers' skills, for instance, are most evident in the improvised strategies they deploy to cope with the clash between prescriptive documentation and the sophisticated, yet unpredictable machines they work with. However, in the organization's view, practices that deviate from formal task descriptions are perceived as

1 Co-workers are, in Orr's study, a rep (representative) and a technician. Henceforth I will refer to workers when quoting Orr's study.

2 Talking about Machines is based on Orr's thesis of 1990 with the same title.

uncalled for and undesirable. By relying on formal descriptions, managers develop “a conceptual outlook that cannot comprehend the importance of noncanonical practices” (Brown & Duguid, 1991: 42). At the same time, they often tend to overlook their own non-canonical ways of conduct to get things done. Based on Suchman (1987), Brown and Duguid (Ibid.) suggest that “people are typically viewed as performing their jobs according to formal job descriptions, despite the fact that daily evidence points to the contrary”.

Orr notices that the canonical work instructions are not enough for an organization to perform effectively. Canonical work instructions are nothing more than “a single, predetermined route with no alternatives” (Brown & Duguid, 1991: 42). The abstractions of formal tasks fall short of the complexity of the actual practices from which they were abstracted. As a consequence, the inadequacies of an organization’s directives actually tend to make work more difficult to accomplish and thus, perversely, demand more, not fewer, improvisational skills. An ostensible down-skilling – induced by management – and actual up-skilling – exercised by workers – proceeded simultaneously. The documentation becomes more prescriptive and simpler when at the same time the task becomes more improvisational and more complex.

According to Brown and Duguid (1991: 42), workers develop “sophisticated non-canonical practices to bridge the gulf between their corporation’s canonical approach and successful work practices, laden with the dilemmas, inconsistencies, and unpredictability of everyday life”. According to Orr (1996: 104-113), the directive documentation and formalized information does not negate the skills of the workers but merely reduces the amount of information provided to them. The burden of making up the difference between what is provided and what is needed, then, resides on the work floor, where bridging the gap between precepts and practice is executed to actually protect the organization from its own “short-sightedness” (Brown & Duguid, 1991: 43). If workers were to precisely follow formal work instructions, the organization’s performance would be seriously endangered. If we translate Orr’s observations to any working organization, we find that workers have to make sense of their actual tasks themselves, in order to perform in a way that is appreciated by the organization’s environment or stakeholders. The process of bridging the gap between formal instruction and training – provided by the organization (i.e. by management) – and actual practice – ‘invented’ and executed by the workers – is captured by the concept of learning. Based on Orr (1996), Brown and Duguid (1991: 43) put it this way:

...thus they develop their understanding of the tasks not in the training programs, but in the very conditions from which the programs separate them, i.e. the authentic activity of their daily work. For the workers (and for the corporation, though it is unaware of it), learning-in-working is an occupational necessity.

5.3.3

NON-CANONICAL PRACTICE: THE PROCESS OF STORYTELLING

The confrontation between the canonical task descriptions and the idiosyncratic requirements that are put in front of the workers by the environment of the organization can call for working around standard procedures. Although at some point the canonical approach can be exhausted, workers still have some options left for getting the job done. In doing so, workers confer on what might be the appropriate way to meet the challenges. By combining their non-canonical practices, the workers still have options to pursue. But this ability to solve non-standard problem adds another, non-canonical task to the workers' case load: the ability to cooperate and work together to solve non-standard problems. This leads to the observation that it is also and equally important to be able to maintain social relationships. However, the formal (canonical) training and documentation, of course, is about substantive or procedural matters and not about relational or procedural 'cleverness'. Orr (1990: 169) observed that a way of establishing a non-canonical approach between co-workers that goes beyond the formal tasks is by entering into an extensive storytelling process: "Solving the problem *in situ* required constructing a coherent account of the *undesired situation*³ out of the incoherence of the data and documentation. To do this, *the co-workers* embark on a long story-telling procedure". Co-workers will develop a composite story based on the interpreted characteristics of the undesired situation in combination with information and memories of the co-workers themselves about previous problematic situations. In retrospect, it was observed that the storytelling process was, essentially, one of diagnosis⁴. This process is based on the acknowledgement that a communal understanding of the problem situation is unavailable from the formal documents and/or task descriptions:

Each story presented an exchangeable account that could be examined and reflected upon to provoke old memories and new insights. Yet more tests and more stories were thereby generated. The key element of diagnosis is the situated production of understanding through narration, in so far that the integration of the various facts of the situation is accomplished through a verbal consideration of those facts with a primary criterion of coherence. The process is situated, in Suchman's terms, in that both the damaged machine and the social context of the user site are essential resources for both the definition of the problem and its resolution. ...They are faced with a failing machine displaying diagnostic information which has previously proved worthless and in which no one has any particular confidence this time. They do not know where they are going to find the information they need to understand and solve this problem. In their search for inspiration, they tell stories (Orr 1990: 178-179).

3 Orr's study speaks of a malfunctioning machine.

4 Notice the close resemblance to Dewey's process of inquiry.

Through storytelling, separate experiences converged, leading to a shared diagnosis of certain previously encountered but unresolved symptoms. Co-workers had constructed a communal interpretation of virtually uninterpretable data and individual experience. Co-workers are now in a position to modify previous stories and build a more insightful one. They both increased their own understanding and added to their community's collective knowledge. Such stories are passed around, becoming part of the repertoire available to all workers. A story, as an analytical device and shared in the community, is then used and further modified in similar diagnostic efforts.

5.3.4

INTERPRETING THE CHARACTERISTICS OF NON-CANONICAL WORK PRACTICE

Brown and Duguid (1991) made an extensive analysis of studies on the description of actual work practices by introducing the overlapping categories of narration, collaboration and social construction. They use these categories because they “get to the heart of what [the workers] do and yet which, significantly, have no place in the organization's abstracted, canonical accounts of their work” (Brown & Duguid, 1991: 44).

Narration. Stories and their telling reflect the complex social web within which work takes place and the relationship between the narrative, the narrator, and the audience to the specific events of practice. The practical use of stories proves that they are both generally recognizable and convey specific meaning. Stories have profound situated value, but also accumulate the group's wisdom. Or as Brown and Duguid (1991: 44-45) phrase it: “They function, rather like the common law, as a usefully under-constrained means to interpret each new situation in the light of accumulated wisdom and constantly changing circumstances”.

The practice of creating and exchanging of stories has two important aspects. First of all, telling stories helps to *diagnose* the state of a troublesome situation. Workers begin by extracting a history from the stakeholders concerned with a problem situation and, with their (expert) analysis of the situation itself, they construct their own account, if necessary with aid of co-workers. They might enter into a sequence of testing, trying out new hypotheses and lines of thinking and evaluating their effects (what if-types of arguments), thus shaping their developing understanding. Storytelling allows them to keep track of the sequences of behavior and of their theories, and thereby construct a meaningful account of the problem at hand. They develop a causal map out of their experience to replace the impoverished, prescribed instructions that they have been provided with by the organization. In order to get the job done, workers need these complex causal stories, producing and circulating them as part of their regular, non-canonical work practice. Producing and circulating ‘causal maps’ can be perceived as an important additional component of the workers' skills. Next to the formal tasks, being an effective worker comprises also the ability to create, trade, and

understand highly situated and self-referential, and to the initiated, highly informative “war stories” (Orr, 1996: 125; Brown & Duguid, 1991).

Next to diagnosis, the second characteristic of storytelling is that the stories also represent what Brown and Duguid (Ibid., p. 45) call “repositories of accumulated wisdom”. They argue that narratives produced in communities ensure the community members’ capability to work from “the ravages of modern idealizations of work and related down-skilling practices”. In this sense the concept of reflexive modernization (cf. Beck, Lash & Giddens, 1994) placed in an organizational setting may well capture the tendency to swamp workers with more detailed formal job descriptions and tasks and managing and control systems, making it harder to get the actual job done, providing them with an incentive to pursue non-canonical practices⁵. Brown and Duguid (1991: 45-46) describe this idea as follows:

The canonical decision trees, privileging the decontextualized over the situated, effectively sweep away the clutter of practice. But it is in the face of just this clutter that the workers’ skills are needed. Improvisational skills that allow the workers⁶ to circumvent the inadequacies of the formal job descriptions are not only developed but also preserved in community storytelling.

Developing narratives may be perceived as a process with two dimensions. First, there is the dimension of the individual versus the collective. The narrative has meaning for the individual worker and for the community of workers he belongs to. The (set of) narrative(s) gives an individual worker a sense of belonging to a specific community which defines his identity as a worker. Moreover, the (set of) narrative(s) separates one community from another, even strengthening this sense of belonging. Second, there is the dimension of generality versus particularity, of generic versus situated. Within a community, narratives represent ‘generality’ in its approach to problematic situations. The narrative serves as a general approach to certain (re-)emerging problems. But on the other hand, the narrative is developed by one particular community dealing with one particular (set of) problem situation(s). So between communities, narratives are not exchangeable, representing their particular, situated relevance for each of them. Jordan (1989) indicates the importance of informal stories. These non-canonical practices survive through storytelling, despite the organization’s worrisome decontextualized attempts to replace them with canonical practices. Jordan notes that the two functions of storytelling, diagnosis and preservation, are inseparable. Orr also suggests

5 Perhaps formal canonical job descriptions and guidelines can be perceived as necessary, pre-conditional artefacts for developing alternative (non-canonical) practices. After all, one has to have some starting point for developing something new.

6 Brown and Duguid follow Orr’s figure of ‘reps’. Earlier, I replaced them with the more general term of ‘workers’.

that “the use of story-telling both to preserve knowledge and to consider it in subsequent diagnoses coincides with the narrative character of diagnosis” (1990: 178). They are separated for the purpose of analysis only.

Based on shared narratives, a second important aspect of the workers’ actions is that they are obviously communal and thereby *collaborative*. In line with Orr’s study, it is easy to comprehend that community members – that is, workers with different tasks and responsibilities – go through a collective, not individual, process. And so is the process of learning-in-practice that is attached to the development of narratives. Hence, individual learning is inseparable from collective learning⁷, in the sense that the developed insight is not of a private nature, but a socially constructed and distributed one. Thus, faced with a difficult problem, workers join forces in discussing problems in groups. Together, they trade stories, develop insights and construct new options. Each of the community members has a story based on personal experience that adds a significant piece to the analytical puzzle.

In this respect, Brown and Duguid (1991) point to the discrepancy between the individual level on which tasks are prescribed, organized and evaluated, and the collective level in which they are executed. Therefore, it is important to emphasize the collaborative nature of actual practice within the workers’ community, despite the organization’s view that their practice is an individual task. The formal job description and training implicitly maintain the illusion that work is individual and the central relationship of the worker is that between an individual and the organization, According to Orr (1996), most activities defined by management are those that one worker will do, and work, with regard to employment, is discussed in terms of a single worker’s relationship to the organization. Most workers tend to work in groups and this fact is not recognized enough in formal work descriptions.

The third aspect of Orr’s view on practice involves *social construction*. This concept has two components: a shared understanding and one’s own identity. First, Orr’s studies show that the workers construct a *shared understanding* out of “bountiful conflicting and confusing data” (Brown & Duguid, 1991: 46). This constructed understanding reflects the workers’ view of the world, i.e. causal maps of the problematic situation. Workers iteratively develop their own representation of the problem situation that differs from that of their formal job description, job training and management directives. Orr argues that workers cultivate connections throughout the organization to help them circumvent the barriers to understanding built by formal documentation and their training. This argument refers to the relational aspect of the evolving practice among workers. The workers’ view that becomes tangible in their narratives interweaves generalities about a problematic situation with particularities about the social context and the substantial challenge. Such an approach is highly situated

7 Individual and collective learning are only separable on an analytical level. This proposition will be elaborated in chapter 6.

and improvisational. The second component of social construction is that, in telling these stories, an individual worker contributes to the construction, development and maintenance of his/her *own identity* as a worker and reciprocally to the construction and development of the community of workers in which (s)he works. Individually, in telling stories, the worker is becoming a member. Simultaneously and interdependently, workers are contributing to the construction and evolution of the community that they are joining. Brown and Duguid (Ibid., p. 47) call these identity creating collectives “communities of interpretation” to indicate that, in the continuous development of these communities, the shared means for interpreting complex practice get formed, transformed and transmitted.

The significance of both components of social construction will become apparent in Chapter 6 in which the practice-based theory of learning (e.g. Lave and Wenger’s concept of legitimate peripheral participation, 1991) is discussed. Like Orr’s analysis of work, this theory takes the formation of identity and community membership as central units of analysis. In the next section, the intricacies of a specific work practice, that of participatory policy analysis, is discussed.

5.4 THE INTRICACIES OF POLICY PRACTICE

This section was grounded on the observations discussed in Chapter 3, that public policy analysis and innovation tend to become more and more participatory and network-structured and governed. Wagenaar and Cook (2003) acknowledge the relationship between policy practice and policy analysis and connect it with the challenges for governance in a networked society. They wonder whether practice-based policy analysis can be used as a device “to step down from the modernist, expert and command-and-control attitude towards public problems” (Ibid., p. 164). And in addition, they raise the question of how practice-oriented policy analysis relates to the large changes in the political-institutional landscape of modern governance. Wagenaar and Cook address a number of relevant issues with regard to governance in a network society, indicating that thinking in formal descriptions and ‘big pictures’ is no longer viable to approach analytical policy activities. These should be replaced by an approach that supports actual practices⁸.

8 Note that this deliberation bears a similar connotation to Frissen’s observation that “governance is moving to the bottom of society” (1999); see Chapter 3.

5.4.1

THE 'STRUGGLE' BETWEEN CANONICAL AND NON-CANONICAL POLICY ANALYSIS

Based on the deliberations of Wagenaar and Cook (2003) and Orr (1996), I presuppose that similar intricacies emerge with regard to actual work practice, both in office work and in manual labor as analytical policy activities. These similar intricacies point to the assumption that formal knowledge, work manuals, and job descriptions are not enough for policy analysts to perform accurately in the light of the problem situations that arise in networked policy environments. Many tasks, whether it be repairing complex computerized machines (as in Orr's study) or preparing policy advice on a highly delicate matter, cannot be executed without personal and practical judgment on the part of the practitioners concerned.

Especially for analytical policy activities, the complexity of today's policy problems and, hence, of the tasks required of policy analysts makes practical judgment indispensable. Many policy problems are 'ill structured' or 'wicked' (cf. Douglas & Wildavsky, 1982; Hirschmüller & Hoppe, 1998). They have to be solved in a context that suffers from an ongoing reflexive modernization (cf. Beck, Lash & Giddens, 1994) that is caused by the endless production of prescriptive policy guidelines. Swamping policy analysts with formal job descriptions, manuals, policy prescriptions and monitoring and accountability systems only diminishes their ability to oversee all intricacies of the problem situation, and then take them into account to make accurate practical judgments as a basis for action.

Reflexive modernization prevails, forcing practitioners to act on 'representations' instead of 'real' issues. To fully understand the intricacies of policy practices, it is not enough "to identify a series of standard routines and procedures and declare it a practice" (Wagenaar & Cook, 2003: 165). Standard routines and prescribed procedures are only part of the story. If policy analysts would rely solely on these superficial representations, large portions of the actual story would remain unheard. Wagenaar and Cook advocate bringing the realities of other network actors into play to design novel solutions for concrete practical issues. The word 'realities' is deliberately put between quotes here to acknowledge that problem situations and their possible solutions are not given entities but essentially have a constructed nature. Based on the work by Kahne and Schwartz (1978), Wagenaar and Cook (2003: 165) advocate that

the genesis of any practice is littered with countless choices of which elements in the original problem situation to emphasize and which to neglect, which elements from earlier practices to incorporate and which to discard, from which related practices to borrow in the solution of a problem, which consequences to take seriously and which to take for granted, and how in general to define what is relevant foreground and irrelevant background in the first place.

According to Reich (1988: 142) policy practices are capable of “legitimizing some problems, solutions and experiences as appropriate for public action (i.e. policies), while marginalizing and discarding others”.

Dominant policy practices can cause biases for policy analysts, politicians and representatives of network actors because of their ability to “define the moral-political landscape while pushing other experiences or possibilities out of the debate” (Wagenaar & Cook, 2003: 166). This pitfall cannot be overcome by standard routines and procedures because they represent, or at least do not challenge, the ruling policy practice. Challenging or changing the existing policy practice can only be done by bringing the person (i.e. the policy analyst) back into play. If any subject is sensitive to ‘foreign’ and non-conforming experiences and insights, it is – or at least should be – the policy analyst. Or, as Wagenaar and Cook (2003: 166) advocate accurately:

the analyst needs an inside understanding of the formal and tacit knowledge that informs actors’ daily activities. A lack of understanding of the practices of policy actors, in the sense of a thick description of what it takes for the actor to be an experienced practitioner, would keep the analyst from understanding the pragmatic roots of contested policy situations. People solve problems by employing their commonsense rationality, their *phronesis*⁹; even when they ‘apply’ general knowledge, since general knowledge can never exhaustively cover the contingencies of concrete situations.

Policy analysts – usually trained, managed and instructed to perform according to standard routines and procedures – are members of policy communities in which they are confronted with a variety in experiences, insights and opinions of other practitioners, representing network actors. They will be challenged to uphold and defend the existing policy practice and, if they cannot do so convincingly, are urged to work together on a new, alternative practice. As a consequence, policy analysts must have the ability to find and process the components for these new practices, brought into play by the discourses of the representatives of network actors involved. Based on Jonsen and Toulmin (1988) and Schwandt (2000), Wagenaar and Cook (2003: 167) argue that “the analyst must interpretatively reconstruct their point of view. One has to describe and interpret the concrete, temporal and presumptive knowledge the actor evokes to find his way through the practical contingencies of concrete situations”. Of course, this observation is a tribute to Dewey’s process of inquiry.

9 Based on Dunne’s concept of practice in Western philosophy, Wagenaar and Cook point out that policy analysis has become ridden with what they call *technê*, that is, technical reason. They advocate bringing *phronesis*, practical reason, back into the practice of policy analysis.

For this inquiry to be effective, redefining the role of the policy analyst in the policy process and of the roles of any other practitioners involved seems to be necessary. Not only should policy analysts be able to let go of standard routines and procedures, in turn, all other stakeholders involved must be able to abandon their ‘canonical practices’. Wagenaar and Cook (Ibid.) advocate that “what the redefined role of the analyst in the network society amounts to is, above all, a stance. That stance needs to be authentic, critical, participative, reflexive and pragmatic”. In reference to the relativist/pragmatist inquiry described in section 3.6, I interpret this stance as being able to develop non-canonical practices of policy analysis, and based on that, being able to enter and function in (non-canonical) communities of (policy) practice. The challenge lies not in constructing and implementing an innovative process of policy analysis for yet another policy plan, but in executing such forms of policy analysis that have immediate value for policy practice.

5.4.2

PRACTICAL POLICY ANALYSIS AS REFLEXIVE CONCEPT

Wagenaar and Cook (2003) advocate that reintroducing the practice perspective in policy analysis recasts the traditional object of analysis in dialectical terms. In their view ‘dialectical’ means that the problem and solution are not given, but bring each other into being in the process of acting upon the world. Practice is never entirely instrumental but includes an overall judgment, taking into account various aspects of the situation, both the objective and the personal. Policy analysis as a practical activity can be perceived as “the relational interdependency of agency and world, of activity, meaning, cognition, learning and knowing” (Lave & Wenger, 1991: 50).

Policy practice originates from a sense of urgency about specific and real situations. Being able to relate to such situations, even though not experienced oneself, is a vital competency for policy analysts. This means that any practitioner, including the policy analyst, will never be “a detached observer” (Wagenaar & Cook, 2003: 168) because one’s practice rests on one’s conduct. Dunne (1993: 358) rephrases this as: “how the actor relates to others in the proximate and distal policy environment, and how he or she wants others to see him or her, are inescapable concerns of effective practice”.

Actual engagement in policy practice is no cold blooded activity, but is likely to arouse emotions. Being able to deal with that requires emotional sensitivity and skills from policy analysts and other stakeholders, in addition to technical and procedural competences derived from canonical practice. Emotions and feelings are, perhaps, indicators for emerging non-canonical practices. We could ask ourselves whether the affective components of effective policy practice are indeed indicators of a need for alternating practice and change in the public domain. Nussbaum (1990) and Forester (1999) each point to the necessity of combining the cognitive and the affective to provide a practical response or apply a practical reason (*phronesis*).

The combination of technical skills (administration, procedures, calculation) with emotional competences moves policy practice into the domain of deliberation and discourse, pulling it away from the traditional, modernist approach. Wagenaar and Cook (2003) conclude that a deliberative approach to policy practice, in my opinion closely related to the theories on non-canonical practice by Brown and Duguid (1991), Lave and Wenger (1991) and Orr (1996), is inevitable for coming to grips with the new modernity¹⁰ in society and public policy. This inevitability is also indicated by Wagenaar and Cook (2003: 169; cf. Mayntz, 1999):

In the new modernity of public policy, the analyst works in highly contested situations of policy controversy, where discourses clash. Traditional hierarchic institutions of government see their steering capacity in these situations curtailed, as they have to share power with shifting networks of private and semi-private and transnational organization.

Policy practice in the networked society entails, more and more, entering into non-canonical practice and letting go of canonical routines for problem-solving. Wagenaar and Cook (2003: 170; cf. Taylor, 1995) address a practice-orientation to policy analysis as an approach that interactively and deliberately balances problems, people and policies. Policy analysis as a device for problem-solving is not a question of 'objectification' but a situated product of collective practice:

Problem solving in the practice paradigm is not manipulation of preconceived variables, but more the discovery of preferences, position and identity; it is finding out where one stands in relation to the problem at hand, what we value in this particular situation, who we are in relation to the others who are involved in the issue. Success is not measured in terms of the one best solution, that is in terms of a position on a set of hard, preferably quantitative criteria, but rather as Taylor observed, in terms of transitions¹¹.

In this respect, Wagenaar and Cook (2003: 170) note that the particular value of policy practice is that it functions as "units of reflexivity". They refer to two different meanings of reflexivity, the first by Giddens (1984) and the second by Beck (1999). In Giddens' meaning of reflexivity, the analysis of policy practice helps "the analyst and the audience to reflect on the foundation, consequences and problems of policy processes in the changed institutional landscape of the new modernity" (Wagenaar & Cook, 2003: 170). The volatility and dynamism of the constantly changing issues, coalitions and preferences cannot be under-

10 In Frissen's vocabulary: post-modernity.

11 I would use 'change' to indicate the desired dynamic, instead of 'transitions', avoiding the modernistic and normative connotation of the concept of transition management.

stood from a static perspective and a canonical approach to policy analytical work. Beck's definition of reflexivity points to the unintended consequences of policies, as mediated by the practices that constitute them. Only by translating policy into action, thus developing a policy practice, are we able to foster its consequences, positive or negative, with regard to their problem-solving capacity¹². Based on these two meanings, Wagenaar and Cook (Ibid.) conclude that "we might be more mindful of the limitations of concerted collective action and alert to the presuppositions about it".

This conclusion draws attention to an alternative meaning of reflexivity which contrasts with Giddens' and Beck's macro-sociological perspective and emphasizes the micro-level view of practical reason (i.e. *phronesis*). An important reason for this contrast is vested in the recommendation earlier in this paragraph to reintroduce the acting person to the analytical policy activities. Wagenaar and Cook (Ibid., p. 171) advocate that by locating "policy in the everyday world of concrete practical judgment, practice theory collapses such traditional dichotomies as that between individual and environment". In addition, they regard the policy analyst as being positioned closest to the points of action, often engaged in local actors' intimate knowledge of the complexities of the problematic situation at hand. The practice-oriented policy analyst will take notice of the deliberations of 'ordinary people', as well as the representatives of network actors. As a result, the outcomes of localized and participatory policy analysis will tend to have a 'phronetic' nature instead of the usual technical approach¹³.

5.5

THE PRACTICE OF PUBLIC POLICY INNOVATION

Wagenaar and Cook's (2003) advocacy to bring the individual policy analyst and practice perspective back into play for dealing with 'the intricacies of policy analysis in the institutional landscape of the new modernity', inadvertently applies to innovation processes in the public domain, being a specific type of policy analysis. In this section, the practice perspective on public policy innovation is examined. In addition, its capacity for operationalizing the process of sense-making in innovation, earlier described as "interpretative innovation" (Brown & Duguid, 1991), is examined.

12 Note the close relation with Daft & Weick's (1984) concept of enacting as mode for interpretation in organizations, introduced in chapter 4.

13 Note the close reference to Jasanoff's concept of 'serviceable truth'. This concept refers to 'a state of knowledge that satisfies tests of scientific acceptability and supports reasoned decision-making, but also assures those exposed to risk that their interests have not been sacrificed on the altar of an impossible scientific certainty' (Jasanoff, 1990).

5.5.1

PRACTICING PUBLIC POLICY INNOVATION

Traditional processes of policy analysis are dominated by policy analysts and scientists who are usually organized along formal and sectoral lines in policy agencies and knowledge institutes. As one can imagine, these actors are likely to develop canonical routines of policy analysis by relying (solely) on formal interests and expert knowledge. But as earlier concluded, formal interests that are politically sanctioned, and expert knowledge that is scientifically sanctioned, may be not adequate enough resources for policy analysis that lives up to the needs of and forces in the network society. Making productive use of the network's capacity for innovation requires the capacity to look beyond standard knowledge sources and research routines. In addition, as has been argued in Section 4.7, innovation is associated with doing, thus bringing the practice perspective back into play.

In my view, policy networks' effective policy analysis includes using practical reason (i.e. *phronesis*) of both policy analysts and representatives of other network actors. Even when participation is not anticipated in the formal policy process, in many cases it becomes 'negotiated' or 'forced' by the network actors. Their introduction of alternative problem perceptions, non-expert knowledge, and non-formal interests into policy analysis inevitably challenges the standard routines in the public policy domain. This means that participatory policy analysis is likely to result in non-canonical policy practices. Moreover, effective participatory policy analysis should be designed to make productive use of emerging non-canonical practices.

It is my proposition that non-canonical policy practices actively contribute to change and innovation in the public policy domain, changing the characteristics of the domain itself simultaneously. In this way the public policy domain is able to stay in tune with the ever-changing needs of the network society. Network actors have to make sense of changing societal challenges, of altering consumer preferences, of new institutional arrangements. In modernist traditions most of the initial sense-making process is supposed to take place at the level of strategic management. The interpretation of what is going on and its consequences for the organization are usually conceived by top-level management and then translated into objectives for researchers and policy analysts to come up with solutions that must enable the organization to deal with the outside challenges. These solutions, then, have to be taught to and implemented by the work floor. As one can imagine, with Orr's deliberations in mind, this will take place in canonical terms by means of teaching new formal tasks. Implementation is the proof of the pudding: To what extent are the new approaches and technologies meeting the new requirements from outside? The policy analysts are the first to know how this works out and, if necessary, can decide to adapt the implementation tasks to meet the actual requirements by putting in motion the process of changing canonical tasks into non-canonical practice (cf. Orr, 1996; Brown & Duguid, 1991). With few changes compared to Orr's studies, this could be a description of the activity of inventive,

non-canonical groups which similarly ignore precedent, rules, and traditional expectations and break conventional boundaries. In this sense, innovation is perceived as an accidental side effect of evolving non-canonical practice in organizations. This is much overlooked by management and decision-makers who are likely to be more in the business of initiating strategic innovation.

But, can we find evidence for a more deliberative, instead of accidental, approach to the practice of innovation, in which management initiates and encourages innovation in close interaction with the practicing workers? Laws (2006) shows such an approach based on an ethnographic study¹⁴. I argue that this deliberate approach can be characterized using the same (analytical) categories that Orr and Brown and Duguid (see Section 5.3.4) have employed to identify accidentally evolving new practices induced by workers in an organization. Laws's study adds the active involvement of an organization's top-level management. Laws (2006: 348-349) states that

the shift from a stable, well-known practice to an open-ended one, requires more substantial reflection and re-evaluation... [by actors involved because they have to change their practice from] matching known problems to known solutions to figuring out what the problems were and designing ways to deal with them.

Thus, the character of the interactions between management, staff, and workers seriously influences the development of a jointly acceptable and feasible new practice. Interaction is characterized by “respect for norms of conversation that was demonstrated by listening, by treating others' views as understandable, and by giving reasons for one's own that open them for scrutiny” (Ibid., p. 349). The conversational approach to developing a practice of innovation matches Orr's and Brown and Duguid's advocacy for storytelling as a category for identifying and eliciting emergent new practices. Conversation or storytelling is largely mediated by speech¹⁵ – although other ‘knowledge conveying media’ can be put in place as well¹⁶. Laws (Ibid., p. 351) indicates that talk is an “institutional device for modulating the interplay between shared concerns and divergent perspectives and interests”. The continuous adjustment of the co-working (potential) actors' perceptions of the problematic situation, their interests in it and their interactions are framing the developing practice. The interests at hand are “sufficient to generate the commitment to talk in an open way, to reflect on self, others, and the future in light of these exchanges, and, thereby, to sustain the possibility of

14 Laws examined the process of technological development and innovation in a bus company that wanted to step down from the traditional buses with diesel engines in favor of more environmentally-friendly buses powered by fuel cells.

15 See also Vygotsky's (1978) and Wells' (1999) deliberations on the importance of speech for development and learning in Chapter 8.

16 Referring to section 6.9.3 on boundary objects.

talking in a way that allows the networks to develop that secure and sustain a capacity to perceive and to act” (Ibid.). It is indicated that, in addition to intra-organizational interactions, the conversational approach to the development of new practices spans organizational boundaries, mediating the interactions between the actors involved. Thus, conversation or storytelling is capable of modulating inter-organizational or network innovation.

In line with Wagenaar and Cook’s (2003) advocacy for taking the individual policy analyst back into play, Laws (2006) emphasizes the importance of individuals for initiating and implementing innovation. Although it is initiated by individuals, innovation is capable of altering policies and institutions.

Laws draws specific attention to the institutional context in which storytelling individuals develop the intended inter-organizational practice by determining the value of roles performed by (groups of) individuals. Roles can be perceived as artefacts of the institutional context that shape interaction, and thus drive the development of collaborative practice. Laws (2006: 353) indicates that “the articulation of roles interprets the situation and helps us analyze it”. Roles are a concept that individuals can relate to¹⁷. The role set that represents the interactions that constitute the development of innovative practice in a public policy network, crossing organizational boundaries, is not a fixed thing but the kind of dynamic set of relationships that is expressed by the idea of an ecology. To facilitate (deliberative) innovation in a network context, Laws describes the roles the actors involved have in developing the new practice. Role descriptions help us to reflect on the evolving practice by comparing the outcome with the intentions at the start of the innovation process. The contribution of the actors to the actual outcome can be traced back to the intended roles. Discrepancies can thus be fed back to (groups of) individuals who play the described roles (or at least, act as representatives for the actors involved).

5.5.2

INTERPRETING INNOVATION PRACTICE IN WINN THROUGH RHETORICAL AND ACTION FRAMES

In Section 4.8.3. I made the distinction between public policy innovation and ‘normal’ policy-making processes. For this distinction the shift of the existing policy paradigm is the decisive criterion. In Section 1.2. I indicated that this shift in policy paradigm is currently being interpreted and translated into a new policy regime, that is composed of alternative policy objectives, measures, and resources (see Section 4.8.1). This translation is supported by a variety of knowledge-related activities, e.g. developed in various innovation programs. As the innovation program for water management, WINN aims to operationalize the new

17 Laws gives the example of roles in a baseball team (cf. Long, 1958), an eloquent way of eliciting the easiness with which one can relate to the importance of playing your part in achieving a bigger objective – as we have seen from the Boston Red Sox’ victory in 2007’s US World Series.

policy paradigm (for the objective of WINN, see Section 1.6.1) for this specific policy domain which materializes in a practice of conceiving of and organizing innovation in water management.

In this respect I argue that ‘conceiving of’ innovation essentially differs from ‘organizing’ it. This means that the practice in WINN, ‘conceiving of and organizing innovation in water management’ (see Section 1.6.4), refers to the two types of frames and subsequent practices. As indicated in Section 4.8.6, Schön and Rein (1994: 32) distinguish between rhetorical and action frames. Conceiving of innovation is more or less connected to the rhetorical frame and the subsequent practice of policy debate, whereas organizing innovation (i.e. the implementation of conceived innovation) refers to the action frame and the subsequent practice of policy implementation. Of course, even as these frames and practices have their idiosyncratic rationales and codes, they are inseparable in the sense that decisions and dynamics within one frame and subsequent set of practices inevitably bends back on the other¹⁸. Both frames are relevant to public policy innovation because this concept simultaneously presupposes thinking and acting, as described in WINN’s innovation practice.

We must avoid the evident pitfall of thinking that only the action frame refers to the concept of practice. Both frames materialize in practice, be it of a different nature. Rhetorical frames refer equally to practice as action frames (obviously) do. Public policy professionals or network actors can resort to activities that refer to the rhetorical frame for public policy innovation. Through speech, debates, publications, and media appearances they ‘practice’ rhetoric that is aimed at setting or influencing the innovation agenda. Rhetorical frames tend to relate to the practice of conceiving innovation. Action frames tend to relate to the practice of organizing innovation. Public policy professionals or network actors involved can resort to activities that refer to the action frame of public policy innovation. Through acquiring and allocating resources, building alliances, and commissioning concrete assignments to ‘build a site’, they ‘execute’ the innovation agenda and, in turn, envisage the next version of it.

Both types of practices, and their frames, are capable of changing each of the objects of public policy innovation (see Section 4.8.2). Applying an innovative concept at a demonstration site, which refers to the action frame, may end up changing policy objects and legislative arrangements, or even societal perceptions. For example, under the changed policy paradigm, in many current spatial scenarios water is more and more ‘welcomed’ to locations from which it was formerly banished, such as dwellings and industrial sites, altering (policy) preferences with regard to spatial planning. In today’s water management innovation, the

18 Debating change leads to action (see Section 2.6.2, the logic of action). In turn, action often leads to (re-) thinking. As we have seen, talk refers to action, so the (verbal) articulation of what is thought may be the bridge between thinking and acting.

rhetorical frame is ever present. The recent discussions about the tulip-shaped island off the coast of the province of South-Holland can be perceived as practicing rhetoric in public policy innovation for water management¹⁹.

Based on the description of the formal, idealistic practice in WINN (see Section 1.6.4), I argue that public policy innovation for water management connects to both frames at the same time, emphasizing the hybrid practice in WINN. The hybrid nature of the practice of public policy innovation challenges the role assumptions of the professionals who are practicing in WINN. In this respect, Laws (2007: 54-59) speaks of the “divided profession” to describe the diverging foci that public policy professionals, including those who are in the business of innovation, have to deal with. With the concept of the divided profession, Laws characterizes the professional splits as working simultaneously in policy, research, and practice.

WINN professionals are supposed to be able, or at least be able to develop the competences to interpret the new policy objectives that should represent the paradigm shift and translate them into innovation initiatives and projects. In doing so, they must be able to acquire, assess, and apply relevant knowledge of all types, including scientific, and combine this knowledge with the know-how of engineers and (local) stakeholders. In addition, they must be able to play the field of water management innovation, in the sense that they have to influence the policy debate about water management innovation or, if possible, set its agenda by launching new ideas and ‘proof balloons’. This obviously refers to the rhetorical frame of public policy innovation. In addition, and referring to the action frame, WINN professionals are supposed to organize the actual dissemination and implementation of innovative concepts and/or technologies in day-to-day water management.

5.5.3

PUBLIC POLICY INNOVATION AS THE PRACTICE OF SENSE-MAKING

In Chapter 4 (Section 4.9.4), two modes or behaviors for interpreting the dynamics of an unanalyzable environment were discussed (cf. Daft & Weick, 1984). Brown and Duguid (1991) argue that these modes – discovery and enacting – reveal an actor’s capacity and attitude towards innovation. I propose to accept enacting as the main mode for interpretation of the dynamics in the public policy domain. I indicate that the dynamics in today’s network environment are largely unanalyzable and the degree of intrusiveness by public policy actors is high.

Brown and Duguid (1991: 51-52) argue that enacting as an interpretation mode can be perceived as interpretative innovation. In their view, interpretative innovation is driven by the

19 See the ongoing rhetoric by members of the Innovation Platform, *De Volkskrant*, November 8, 2007 and July 23, 2008.

process of sense-making, which brings the perspective of the individual practitioner back on stage. Enacting is perceived to be a deliberate organizational strategy. The manifestation of that strategy on the individual plane is seen as a process, or should we say a practice of sense-making (cf. Weick et al., 2005). Following Wagenaar and Cook's (2003) advocacy for a practice perspective, we have to examine the practice of sense-making that operationalizes the interpretative innovation. I argue here that the practice of sense-making can be understood through both frames that Schön and Rein have indicated, the rhetorical and action frames.

Weick et al. (2005) elaborate on the concept of sense-making in detail. They argue that "sense-making involves the ongoing retrospective development of plausible images that rationalize what people are doing" (p. 409). They claim that sense-making is a double-edged process of looking for clues to make plausible sense of ongoing events in our social environment in hindsight, while simultaneously trying to find order in this sequence of events that evolves around us. This means that sense-making is "about the interplay of action and interpretation rather than the influence of evaluation on choice" (Ibid.). Taylor and Van Every (2000: 275) define sense-making as "a way station on the road to a consensually constructed, coordinated system of action".

What does the process of sense-making entail? How is it executed and where does it lead? Weick et al. (2005: 410) perceive sense-making as "a search for answers to the question, what's the story?". This question is then unraveled into sub-questions, such as: how does something come to be an event for organizational members? What does an event mean? And finally, now what should I/we do?. Through this line of questioning, people attempt to give meaning to what is going on around them and what their options for action are. The intertwined relationship between thought and action (indicated by Ahrendt and Dewey), and mediated by reflection (cf. Schön, 1983), enables them to navigate through life circumstances (cf. Vaihinger, 1876; see Section 6.3.3).

Weick et al. (2005: 411-413) delineate eight properties of such a question-driven process. For the purpose of the interpretative approach to innovation, I will briefly address them here:

1. sense-making organizes flux – This refers to the supportive property sense-making has in structuring the chaos around us.
2. sense-making starts with noticing and bracketing – This points to the discerning property sense-making has in singling out events that need to be addressed.
3. sense-making is about labeling – This refers to the discriminating property sense-making has for the noticed and 'isolated' events that need to be taken care off.
4. sense-making is retrospective – This refers to the 'rear mirror' property sense-making has for putting together the pieces of the puzzle that have led to the event or problematic situation.
5. sense-making is about presumption – This taps into the deductive property sense-making has for connecting abstract knowledge to concrete experience and manifestations (cf. Weick et al., 2005 and Paget, 1988).

6. sense-making is social and systemic – This points to the interactionist and interdependent nature of sense-making that takes place in the ‘networked fabric of interdependent actors and interests’.
7. sense-making is about action – This refers to the conative property of sense-making, with the notion that “action and talk are treated as cycles rather than as linear sequences, either one can be designated as the starting point to the destination”.
8. sense-making is about organizing through communication – This refers to the articulation property sense-making has for “talking an event into being, drawing on the resources of language in order to formulate and exchange...” (based on Taylor & Van Every, 2000: 33-34).

It is obvious that these properties refer to the rhetorical and action frames with which the practice of public policy innovation can be understood. These properties are helpful to understand and unravel the process of sense-making, and to accept it as a concept for operationalizing the practice of interpretative innovation. Experience, discovery, action, deliberation and reflection all are intertwined in sense-making, emerging simultaneously, helping to get individuals in their organizations through events that need attention²⁰. However, I must add two nuances on Weick et al.’s theory (2005) of the sense-making process and its properties. First, we must be aware of the reflexive nature of the process of sense-making and its properties. Making sense of what is going on inspires a course of action²¹, which, in turn, folds back on the action-taking actor(s) through the reaction(s) of the network (actors). Sense-making is a continuous process of reflection, interpretation, acting, reacting, and so on and so forth. Second, we must acknowledge that Weick et al. tend to present sense-making as an approach to answering all existential questions in organizations, cross-organizational communities, and with their constituting members. As one can imagine, collaborative sense-making processes take a considerable amount of time, without the guarantee that a shared interpretation of what is going on and how to deal with it, can be reached. Fortunately, they offer some relativist thoughts to tone down the expectations (Ibid., p. 418):

When information is distributed among numerous parties, each with a different impression of what is happening, the cost of reconciling these disparate views is high, so discrepancies and ambiguities in outlook persist. Thus, multiple theories develop about what is happening and what needs to be done, people learn to work interdependently despite couplings loosened by the pursuit of diverse theories, and inductions may be more clearly associated with effectiveness when they provide equivalent rather than shared meanings.

20 In this sense, their properties are useful for making sense of the process of sense-making.

21 Several scholars have indicated that knowing leads to acting.

With this in mind, I propose employing an ironic approach to sense-making, in the sense that it has a provisional and temporal nature.

And so we get a picture of what innovation practice in public policy domain might entail: a dialectical process between individual representatives of policy network actors engaged in sense-making. Innovation practice in the public policy domain is largely about conceiving new meanings for the challenges the actors are involved in, through organizing a process of collaborative sense-making that incorporates both rhetoric and action. Public policy innovation establishes new connections between network actors, their knowledge bases and resources, aiming at (future) problem resolution. The practice of public policy innovation is based on a collaborative process that centers around interpretations of what is going on and what we might do about it. Public policy innovation, then, results in a communal practice of sense-making and interpretative change.

5.6

CLOSING REMARKS: PUBLIC POLICY INNOVATION PRACTICE AS STRINGING BEADS ON A CHAIN?

Public policy innovation can be largely operationalized in a process or practice of sense-making between network actors. Innovation in the public domain is a networking activity, which entails a practice of puzzling together perceptions, urgency, legitimacy, knowledge and actors to engage in and embark on an unknown endeavor. Innovation practice in the public domain is a challenge of coordinating actors, interests and knowledge and stringing them together like beads on a chain.

Accepting public policy innovation as a specific form of policy analysis, we could argue that the practice of public policy innovation in a networked policy environment tends to become nothing more than what Levi-Strauss (1966) calls 'bricolage', that is, the ability to make do with whatever is at hand. He describes the concept of bricolage (and the person that performs it, the bricoleur) as follows:

His universe of instruments is closed and the rules of his game are always to make do with 'whatever is at hand', that is to say with a set of tools and materials which is always finite and is also heterogeneous because what it contains bears no relation to the current project, or indeed to any particular project, but is the contingent result of all the occasions there have been to renew or enrich the stock... Consider him at work and excited by his project. His first practical step is retrospective. He has to turn back to an already existent set made up of tools and materials, to consider or reconsider what it contains and, finally and above all, to engage

in a sort of dialogue with it and, before choosing between them, to index the possible answers which the whole set can offer to his problem. (p.17)

Based on Duijn and Rijnveld (2007), who have characterized today's practice of executing policy analysis as 'bricolage' indicating the do-it-yourself character of being involved in policy analysis and implementation, I argue that the practice of public policy innovation has an equally 'bricolatic character', as the practice described by Levi-Strauss. This means that what professionals engaged in public policy innovation experience is a learning process in which they build pragmatic approaches that do justice to the particular difficulties in which they find themselves (see also Section 4.5 and 4.8.7). This strongly refers to Dewey's theory of inquiry that claims the world is not passively perceived and thereby known, but actively manipulated instead. Manipulation of the environment is an integral part of learning-in-practice. Thus, the next challenge is to reflect on the practice of innovation and knowledge transfer that the practitioners of interpretative public policy innovation will develop when they engage in sense-making. This reflection is based on the relativist/pragmatist inquiry that frames this thesis. The pragmatic reflection on innovation practice will be based on the idea of learning-in-practice; the pragmatic reflection on knowledge transfer is examined through the concept of boundary spanning. Both pragmatic concepts will be discussed in Chapter 6.

Chapter 6

Pragmatic Concepts for Reflecting on the Practice of Innovation and Knowledge Transfer: Learning-In-Practice and Boundary Spanning

6.1

INTRODUCTION

In Chapter 1 the research question of this study was presented. This study examines the design and implementation of a learning course that was developed to provide reflection on the innovation practice and processes of knowledge transfer within a community of practitioners of public policy innovation in water management. This chapter includes a theoretical assessment of the pragmatic concepts with which the impacts of this reflection will be interpreted. Interpretation of the reflection on innovation practice in the WINN program will be provided through the concept of learning-in-practice; the concept of boundary spanning will be used to understand the impacts of reflection on the processes of knowledge transfer in WINN.

Both concepts will be described from a relativist/pragmatist perspective as this is the integrative theoretical framework of this study. I will begin with an introduction of the idea of learning and describe it from several perspectives. Next, two dominant levels of abstraction that are commonly associated with learning will be discussed: individual and collective learning. Because this study is framed in the public policy domain, the notion of policy-oriented learning is examined. Then, in line with previous chapters, a relativist/pragmatist inquiry is presented, examining learning and knowing. This inquiry is the overture for the assessment of the pragmatic concepts, learning-in-practice and boundary spanning, that will be used to interpret the impacts of reflection provided by the intended learning course. A description of the design and its implementation, as well as an assessment of the impacts

of the intended learning course are provided in Chapter 7. These impacts will be reflected on and interpreted along the concepts of learning-in-practice and boundary spanning in Chapter 8.

6.2

THE CONCEPT OF LEARNING

Learning is a frequently used term to point at the processes of giving meaning to events in one's environment. Saljo (1982) indicates that individuals may use more than one concept in their description of what they have learned at different moments in time. Based on Saljo, McGill and Beaty (2001) divide these differences into five types of learning: 1) gaining bits and pieces of knowledge, 2) memorizing, 3) applying knowledge, 4) understanding, and 5) understanding in relation to the real world. These types refer to different attributions that are assigned to learning. Some emphasize the knowledge processing character of learning, others point at the social and interactionist nature of learning, and still others go into the action component of learning. McGill and Beaty (2001: 158) distinguish the cognitive (knowing), the conative (doing) and the affective (feeling) aspects of learning and point to the importance of considering the relationships among the three.

A complicating factor in defining the concept of learning is that learning is often used in a metaphoric way to describe and point out these largely intangible processes in which knowledge is acquired, processed and applied. This is supported by Barker (1997: 20) who states that "learning is a hypothetic construction". The actual learning process that is taking place in the human brain is not observable but the consequences, such as behavioral changes, are. As a consequence of the impossibility of observing learning, a large number of definitions and interpretations of what learning is exists. Each of them points to a specific feature in the wide variety of attributions that are assigned to the concept of learning. To give an idea of how learning is described, I provide some of these definitions. For example, Burns (1995: 99) indicates that "learning is a relatively permanent change in behavior with behavior including both observable activity and internal processes such as thinking, attitudes and emotions". Closely related definitions are that of Barker (1997: 3) who understands learning as "a more or less permanent change in behavior resulting from experiences with an environment", and of Guthrie (1942: 58) who claims that learning must be considered "the alteration in behavior that results from experience".

These definitions are psychologically colored, and tend to be framed in a behaviorist perspective on learning. Each definition emphasizes that something happens to an individual's behavior when learning takes place. These psychologically colored definitions tend to emphasize the behavioral aspect of learning. However, from Saljo's elaboration, we find that there's more to learning than just a change in behavior. Learning also involves knowledge-

related or cognitive aspects as well as social aspects derived from interactions between the individual and his/her (social) environment. The cognitive aspect of learning is addressed by Lewin's definition (1954: 931): "Learning is a change in cognitive structure". Hilgard and Bower (1975: 17) point to the social aspect of learning, by claiming that learning is "the change in a subject's behavior to a given situation brought about by his repeated experiences in that situation".

For a more comprehensive understanding of learning in the processes described in Chapter 4, the behavioral as well as the cognitive and the social-constructive aspects of learning must be included. And, because of my emphasis on the actual practice performed in these processes, the individual dimension will be specifically elicited.

6.3

THREE KEY PERSPECTIVES ON LEARNING

From this inexhaustive and rough introduction on what learning might be, three key perspectives on learning can be identified: the behaviorist, cognitivist and constructivist. These three perspectives point to the mental state of an individual who is engaged in learning. This mental state can be comprised of: 1) a change or alteration in behavior (the behaviorist perspective), 2) the acquisition and processing of knowledge (the cognitivist perspective) and, 3) the construction of an idea of reality through interaction with a social context (the constructivist perspective). These perspectives are discussed in the next paragraphs.

6.3.1

BEHAVIORIST PERSPECTIVE ON LEARNING

In 1913 John B. Watson published a paper in which he argues that in social sciences only *overt* behavior should be studied and recorded, and inner states like motives or mental states should be excluded from scientific research. The reason for this exclusion was his assumption that the latter could not be measured objectively. Objectively here means that events can be observed similarly and simultaneously by more than one observer, and that these observations can be transferred among observers without losing key information. The inner processes within the human mind that Watson called the black box cannot be accessed scientifically. Therefore, the focus on behaviorism is on overt behavior and the stimuli which cause it.

Behaviorism is also known as stimulus-response psychology. Preceding Watson, scientists such as Pavlov and Skinner paved the path for stimulus-response theory. Pavlov developed the concept of classical conditioning, whereas Skinner 'discovered' the idea of operant conditioning. Both concepts are based on the assumption that overt behavior is a result

of responding to environmental stimuli, and that behavior can be changed, or at least be influenced, by designing the right environment. Thus, they assume that people respond in the same way to an arrangement of environmental conditions, and finding the right environmental conditions is the appropriate way to change behavior in the desired direction. The 'right' environmental conditions could be shaped by either punishment and/or reward, or by an alternating pattern of both.

The most substantial criticism of behaviorism is that it locks out internal drivers for human behavior, such as beliefs, attitudes and motivations, and takes the social context in which people learn for granted by abstracting it into the idea of 'the environment'. Moreover, behaviorism does not assess the characteristics of the learning environment.

6.3.2

COGNITIVIST PERSPECTIVE ON LEARNING

Whereas behaviorism tries to explain behavior in terms of stimulus-input, leading to a certain response and thereby neglecting the inner processes, cognitivism focuses specifically on these mental activities. Cognitivism considers the human mind to be a rational formation-processor. It is, therefore, interesting to know how processes such as thinking, attending, knowing, remembering and problem-solving work. Cognitivists use the machine-metaphor: information comes in, is processed, and leads to certain outcomes. The outcome merely depends on the way the information is processed.

The cognitivist perspective focuses on the cognitive structures of learning. The Swiss psychologist Jean Piaget distinguishes two cognition-oriented mechanisms with which people process new knowledge: assimilation and accommodation. With assimilation, an individual incorporates new knowledge into existing cognitive schemes or framework. Consequently, the framework is enriched by new information but does not change fundamentally. With accommodation, the existing cognitive framework is adapted to the new knowledge. Thus, in knowledge processing activities, the cognitive framework is (partially) changed in a more sustainable fashion. According to Piaget (1980: 103), learning requires "a balanced alternation of assimilation and accommodation, a quest for a dynamic equilibrium between what is familiar and what is novel" (see also Mahoney, 2003). If assimilation is the only mechanism in progress, then innovation and renewal do not emerge, for no fundamental change in the existing cognitive framework takes place. In contrast, if accommodation only takes place, the individual (or organization perceived as one entity) does not develop a recognizable and clear-cut identity because the existing knowledge base and attitudes are changed constantly.

6.3.3

CONSTRUCTIVIST PERSPECTIVE ON LEARNING

The verb ‘to construct’ is derived from the Latin ‘con struere’, which means to arrange or to give structure¹. Ongoing structuring processes are the key drivers of constructivism. Various classical philosophers such as Kant, draw attention to the constructive nature of the human mind, emphasizing the power of patterns in our thinking. These patterns, however, are not meant to portray or mirror reality (see also Rorty, 1979) but serve individuals in their navigations through life circumstances (Mahoney, 2003, based on the ideas of the German philosopher Hans Vaihinger). According to Vaihinger (1924) individuals live their lives by means of “fictional functions”. These functions are designed for navigating through circumstances that each of us perceives and constructs individually. These circumstances could be real to some, while being perceived as ‘fictional’ to others. Or, as Vaihinger (1924: 15) stated

...the object of the world of ideas as a whole is not the portrayal of reality – this would be an utterly impossible task – but rather to provide us with an instrument for finding our way about more easily in the world.

These introductory remarks on constructivism indicate that the constructivist perspective on learning emphasizes learning as an active process of constructing representations (of reality). Learning will only occur when people actively process the information and construct their own representations. It is, therefore, necessary to link new information to pre-existing knowledge. Because of this active process, mental representations are very subjective. And, because everybody has different experiences and therefore different pre-existing knowledge, new information will be linked differently. According to constructivists, learning leads to personal, subjective knowledge. This will be further elaborated on in Section 6.7 on the relativist/pragmatist inquiry of learning.

In Mahoney’s view, constructivism pays attention to five basic themes: 1) active agency, 2) order, 3) self, 4) social-symbolic relatedness and 5) lifespan development. These themes are addressed in the following citation of Mahoney²:

With different language and terminological preferences, constructivists have proposed, first, that human experiencing involves continuous active agency. This distinguishes constructivism from forms of determinism that cast humans as passive pawns in the play of larger forces. Second comes the contention that much human activity is devoted to ordering processes – the organizational patterning of experience by means of tacit, emotional meaning-making pro-

1 <http://orgs.unt.edu/constructivism/aboutthejournal.htm>.

2 <http://orgs.unt.edu/constructivism/aboutthejournal.htm>.

cesses. In a third common contention, constructivists argue that the organization of personal activity is fundamentally self-referent or recursive³..... Persons exist and grow in living webs of relationships. The fourth common theme of constructivism is that individuals cannot be understood apart from their organic embeddedness in social and symbolic systems. Finally, all of this active, meaningful, and socially-embedded self-organization reflects an ongoing developmental flow in which dynamic dialectical tensions are essential. Order and disorder co-exist in lifelong quests for a dynamic balance that is never quite achieved. The existential tone here is unmistakable. Together, then, these five themes convey a constructive view of human experience as one that emphasizes meaningful action by a developing self in complex and unfolding relationships.

6.4

LEARNING PERSPECTIVES AND PARTICIPATORY PROCESSES

As indicated earlier, I presume that the participatory processes of policy analysis and innovation will, inevitably, lead to learning. Certainly this is true when these processes have an interpretative proposition and evolve around activities of sense-making. Therefore, it is interesting to gain insight into the relationship between the three key perspectives on learning and participatory processes of policy analysis and interpretative innovation, in order to explore the potential impact of learning on the course, manifestation, and outcomes of these processes.

6.4.1

RELATIONSHIP BETWEEN BEHAVIORISM AND PARTICIPATORY PROCESSES

Behaviorism seems to have limited value for assessing learning that takes place in a participatory process. Understanding the internal drivers of the participating actors is important, as well as the social context in which these actors function. However, some characteristics of behaviorism have value for understanding learning in participatory processes. This value lies in understanding stimuli-response mechanisms. If we consider the behavior of actors as external stimuli for others actors, then we can understand some learning effects that take place. The behavior of actors may provoke behavior in other actors in the process creating a causal pattern of successive behavior in the actors involved. Thus, a phrase like 'the government creates its own opposition' by taking unacceptable measures, points to the consequences of that behavior and the emergence of a 'causal pattern of behavior'. Thus, behaviorism can help us to recognize and understand these patterns. Moreover, participatory processes could incorporate resources (time, attention, information) for actors to help

3 In line with the previous chapter, I would say reflexive.

assess the consequences of their behavior by (*ex ante*) evaluating the impact on the expected behavior of other actors. If the behavior intended is likely to harm the key interests of other actors, it is wise to at least reconsider the necessity of that behavior, for the negative consequences (opposition, resistance, distrust) can be more severe than the expected benefits.

6.4.2

RELATIONSHIP BETWEEN COGNITIVISM AND PARTICIPATORY PROCESSES

The meaning of ‘analysis’ in policy analysis and innovation refers to the cognitive component of learning processes. Production, processing and application of knowledge for problem-solving are some of the main intended purposes of participatory processes. This means that the cognitivist perspective on learning must have great value for these processes. The complexity of today’s policy problems, the acknowledgment that there are many sides to one story and the perceived need for consensus about problem-solving approaches result in extensive searches for meaningful and applicable knowledge. The information processing metaphor that is attached to the cognitivist perspective might be a way to understand learning in participatory processes. However, the information processing capacity of individuals and organizations is limited. This adds to the importance of giving shape to these processes in line with the knowledge processing capacity of the actors involved.

A procedural approach to learning acknowledges that it is impossible for individuals and organizations to come to grips with large amounts and different types of knowledge at once. Piaget’s theory may help to understand the different kinds of effort that individuals have to make in processing large amounts of complex knowledge. For one individual, newly acquired knowledge triggers the assimilation mechanism in knowledge processing, whereas other individuals (implicitly) apply the accommodation mechanism. It is clear that when accommodation is required for processing new cognitive elements, the knowledge processing fundamentally interferes with the individual’s cognitive starting-point, ultimately changing his/her mental framework. Thus, it is likely that the effort an individual has to undertake to accommodate new knowledge into a new cognitive framework is substantial. The efforts themselves, as well as their manifestations, have to be taken into consideration when designing and implementing participatory processes.

6.4.3

RELATIONSHIP BETWEEN CONSTRUCTIVISM AND PARTICIPATORY PROCESSES

The constructivist perspective on learning has perhaps the most obvious relevance for participatory processes of policy analysis and innovation. In Chapter 3 five approaches to participatory processes (cf. Mayer, 1997) were discussed. One of these approaches is the constructivist approach that emphasizes the interactive processes of knowledge construction that takes place in the social environment of participatory processes. The constructivist approach to learning is also referred to as the interactionist approach, underlining the

inevitable contribution of human relationships in constructing and applying knowledge. The interactions between individuals and their social environments (constituted by other individuals as well as by what Vaihinger calls ‘life circumstances’) result in learning that involves the active and joint construction of reality through the exchange of knowledge. Thus, knowledge accommodation in participatory processes might be perceived as ‘joint sense-making’. This is not limited to formal, rational and objective knowledge, but also includes opinions, emotions and idiosyncratic views on what is going on. This indicates a close relationship with the process of sense-making (cf. Weick et al., 2005; see Section 5.5.3).

For participatory processes, the observation that learning leads to a construct of situated knowledge is important. Its construction takes place via a unique process of knowledge processing, in which negotiated knowledge is idiosyncratically combined with present, personal mental conceptions. This can, of course, be facilitated through the use of multiform methods and tools that stimulate the knowledge-negotiation process (see: Duijn et al., 2003). However, acceptance of the subjective nature of knowledge leads to the abandonment of the assumption that what is learned can be (to some extent) controlled and influenced at will. Thus, if we can accept the idea that construction of knowledge takes place, in turn, we must admit that what is being constructed cannot be controlled.

6.5

LEARNING IN ORGANIZATIONS: COLLECTIVE OR ORGANIZATIONAL LEARNING

After elaboration of the concept of learning using its three principle perspectives and the discussion of these perspectives in relation to participatory processes of policy analysis and innovation, the next question is: Who is learning in these processes? If learning takes place in these processes, learning must (obviously) be considered a human activity. From the description in the introduction in Chapter 1, we may preliminarily draw the conclusion that the conveyors of learnings are in fact individuals who are, in most cases, representing network actors. This is something that might be interesting to examine how both individual and organizational learning takes place, and what the relationship between the two is. Moreover, learning in participatory processes of policy analysis and innovation emerges while pursuing certain contributions to policy processes, often designated as policy-oriented learning. This specific learning concept is also examined in the next section.

6.5.1

COLLECTIVE OR ORGANIZATIONAL LEARNING

Engaging in participatory processes of policy-making and innovation presupposes engaging in the world of ‘collectives’. The most dominant collectives in our society are organizations. Daft and Weick (1984: 285) define organizations as “open social systems that process information from the environment”. Many scholars have been studying the organization as a social phenomenon, and each of them provides us with a different perspective. Gareth Morgan’s (1986) book *Images of Organization* is perhaps the most prominent example of the different perspectives on this phenomenon: the systems perspective, the interactionist perspective, the political perspective on organizations, for instance.

The same is true for the concept of organizational learning as a much examined form of collective learning. Moingeon and Edmondson (1996) provide an overview of definitions for organizational learning. The following capacities are attributed to the concept of organizational learning: encoding and modifying routines, acquiring knowledge useful to the organization, increasing the organizational capacity to take productive action, interpretation and sense-making, developing knowledge about action-outcome relationships, and the detection and correction of error. Easterby-Smith et al. (1999) provide a wide range of developments with regard to organizational learning and the learning organization. Some of their attributions are grounded in descriptive theories as guidelines for understanding learning in organizations, while others are translated into intervention models through which learning processes are designed and implemented.

The attribution detection and correction of error is derived from two progenitors of organizational learning, Chris Argyris and Donald Schön. In *Organizational Learning* (1978) they dissect the learning processes in organizations into two levels: single-loop learning and double-loop learning. Single-loop learning involves detection and correction of organizational failures without reviewing the existing strategies and objectives of the organization. Double-loop learning emerges when next to detecting and correcting organizational failures, the existing strategy and objectives are adjusted as well. Frames of reference, skills and goals will be reviewed and altered in order to repair current flaws and avoid future failures.

Designing and realizing single- and double-loop learning is considered to be a learning process in itself. Argyris and Schön (1978: 26) call this learning process “deutero learning”. They had many followers as the organization, both public and private, became more and more important as objects of (scientific) research. Wijnhoven (1995: 44) argues that “organizational learning must be perceived as a social process because it involves individuals learning from each other by means of communication”.

This remark elicits the procedural character of organizational learning which is also acknowledged by Elkjaer (1999). This procedural perspective resides within the constructivist perspective on learning and replaces the traditional, more cognitivist view of acquiring knowledge. Terms like iteration, incrementalism, experiments, trial and error and learning

by doing suggest that the process of acquiring knowledge is increasingly a matter of being open to the environment in which learning takes place. Elkjaer identifies two approaches to organizational learning. First is the cognitive perspective, in which learning is a management tool for developing (mostly) tacit cognitive abilities. This perspective perceives learning as a process of individual cognition.

The second approach is the social perspective, which deals with the way learning occurs in social settings, that is, in what is called communities of practice. This perspective points to the concept of situated learning, learning in a social context. Although learning is a social activity, Elkjaer stresses the individual dimension of social learning: learning in communities of practitioners, which points to both the social and the individual levels of learning. Lave and Wenger (1991) speak of communities of practice with which they seem to be belittling the individual level of learning by solely focusing on the interactional context, and not on the skills, knowledge and professions of individual workers. I adhere to Elkjaer's view on this because of my assumption that an organization, as such does not exist but is composed of individuals. Without individuals, 'organization' is an empty term. The individual dimension of learning is discussed in Section 6.6.

6.5.2

CAPTURING ORGANIZATIONAL LEARNING: KNOWLEDGE MANAGEMENT AS 'METACOGNITION'?

One of the main questions in organizational learning is how to capture, store, transfer and disclose newly created knowledge for future use. In other words, how can the knowledge process in organizations be managed? The issue of knowledge management is founded on the assumption that (all) knowledge can be externalized and explicated by individuals or groups that 'possess' it. In this sense, knowledge about managing knowledge could be perceived as 'metacognition', the (perceived) holy grail for every organization because it assumes to be capable of delivering all relevant knowledge for all (important) decisions. In addition, it is assumed that (all) knowledge can be transferred from one individual or group to the next⁴. If we think that these assumptions can be met, then we can attempt to manage knowledge.

Wijnhoven (2003: 194) defines knowledge management as "the processes that create, distribute, use, exploit, and maintain knowledge". These processes are constructed around so-called knowledge objects or repositories (cf. Brown & Duguid, 1991) in which new findings, ideas or insights are wrapped up. According to Kwan and Balasubramian (2003: 204) knowledge management "involves setting up an environment that allows workers in organizations to create, capture, share, and leverage knowledge to improve performance". Here, knowl-

4 Knowledge transfer is not "throwing back and forth parcels of knowledge between people" – a popular phrase of my TNO-colleague, Mr. Adriaan Slob.

edge is perceived as a ‘tangible’ asset for the organization’s capacity to perform. Knowledge management is ascribed strategic value for an organization’s survival. Hence, in this view, it makes sense to invest in so-called knowledge management systems that should enhance the organization’s strategic capacity. The characteristics attributed to knowledge in these views tend to detach it from and assign it to individuals or groups at will, like a separate commodity. However, Weggeman (1999: 55) offers a description of knowledge management⁵ that indicates that knowledge has something to do with people by claiming that “the design and governing of the processes of the knowledge value chain that increases the output and pleasure of the production factor knowledge”. People, here, are perceived as production factors because the output refers to the financial output (i.e. return on investment) as well as to the learning output. As indicated in the deliberations earlier, it’s people who learn.

Knowledge management is the focus of attention because it tends to promise to facilitate the transfer of knowledge from one organizational entity (a team or a worker) to the next. My position here is that individuals are the key factor in knowledge transfer. This contrasts with the common misconception that knowledge management begins and ends with recording and disclosing (new) knowledge for future use, by capturing it in all kinds of (high tech and user-friendly) knowledge or information systems. This is an attractive illusion (mainly pursued by management). Knowledge is subtracted from a knowledgeable worker and recorded in a manual, book, database or intranet site. Then, less knowledgeable workers are granted access to this recorded knowledge, learn it by heart and are supposed to be equally knowledgeable as their colleagues and capable of performing better or differently. However, this is not representative of the way individuals acquire and transfer knowledge. According to Gasson (2005: 1) organizational knowledge management is problematic because of “the difficulty in combining knowledge of business processes that are largely tacit and embedded in local norms and practice, with information systems that require the formalization and codification of explicit rules by which to process and present data”. This is perhaps even more convincingly emphasized by bringing the modes of analysis for examining organization knowledge management into play. Gasson (*Ibid.*, p. 2) advocates a need to be

reflectively involved in those local systems of social interaction, practice, and sensemaking that constitute organizational work [and simultaneously, must be] engaged in that detached sensemaking and analysis, by which situated knowledge is externalized, reified and made explicit.

This pragmatic, ‘human’ approach to knowledge transfer is elaborated on in Section 6.9.

5 In Dutch: het zodanig inrichten en besturen van de processen in de kenniswaardeketen dat daardoor het rendement en het plezier van de productiefactor kennis vergroot wordt (Weggeman: in: Van Duivenboden et. al, 1999: 55).

6.5.3

COLLECTIVE LEARNING IN THE PUBLIC DOMAIN:
THE CONCEPT OF POLICY-ORIENTED LEARNING

Learning that takes place in processes of public policy is generally perceived as policy-oriented learning (Verbeeten, 1999: 22). Policy-oriented learning and organizational learning are closely related, if one perceives policy-oriented learning as organizational learning involving public policy actors. That is, organizations and individuals involved in public policy processes learn from each other by actively interacting in public policy networks. Moreover, since public policy processes are often not restricted to one organization, policy-oriented learning will tend to materialize in inter-organizational or network learning environments (Knight, 2002). Various authors have addressed the concept of policy-oriented learning. Verbeeten (1999) provides us with an overview of definitions for this concept. Policy-oriented learning is understood as:

- “A self-modifying communications network” (Deutsch, 1966: 80);
- “Relatively enduring alterations of thought or behavioral intentions that result from experience and that are concerned with the attainment (or revision) of policy objectives” (Sabatier, 1993: 19);
- “The relatively enduring change or incorporation of knowledge and perceptions in policy beliefs which in turn contributes to the policy-making process” (Eberg, 1997: 24);
- “A process in which policy actors try to improve public policy measures, policy objectives and underlying normative assumptions. They can do so by detecting and correcting perceived imperfections” (Van der Knaap, 1997: 333). In this definition, Argyris’ definition of organizational learning (see previous paragraph) can be recognized;
- “This combination of adaptive management and political change is social learning” (Lee, 1993: 8).

Verbeeten (1999: 27), herself, defines policy-oriented learning as

the interactive process in which an increase of knowledge and insights results in changes in the definition of the policy issue, the policy objectives and/or the policy instruments. The new policy has at least an equal degree of legitimacy as the replaced policy.

Her definition is largely inspired by the two functions that Glasbergen (1996) attributes to policy-oriented learning. First, policy-oriented learning can contribute to strengthening the policy theory. This function focuses on the substantive-cognitive aspect of policy-oriented learning: the incorporation of more (scientific) knowledge in the theories and assumptions underlying the policy guidelines (may) result in better policies. Second, policy-oriented learning can be perceived as a way to enhance the legitimacy of the policy. This function focuses on the procedural-constructivist aspect of policy-oriented learning: the context of

interaction and communication⁶ in which policies are formulated may result in more acceptance and support for policy guidelines.

Eberg (1997) directs us to two other functions of policy-oriented learning: the structuring of policy problems and the reduction of uncertainty. Both functions are based on the assumption that policy-oriented learning specifically applies to complex, systemic, and unstructured problems (cf. Douglas & Wildavsky, 1982; Hoppe & Van de Graaff, 1989). Unstructured policy problems are characterized by the absence of consensus on both values and knowledge. As a consequence, policy-making for solving, or at least controlling, these types of problems is extremely difficult. Eberg proposes learning as a policy-making approach for complex, unstructured policy problems (cf. Hisschemöller, 1993). Hisschemöller (Ibid., p.180) advocates that learning may be productive way of developing policies for problems that are unstructured when it comes to consensus about relevant values and certainty about available knowledge. For unstructured problems active participation of stakeholders in policy analysis is often sought, in attempt to collaboratively identify the values at stake and to jointly assess the knowledge available for the analysis of potential solutions. The connection between participatory policy making as learning and unstructured policy problems is further explained in Duijn and Drogendijk (1999).

The definitions mentioned above and the functions that Glasbergen and Eberg attribute to policy-oriented learning have a strong instrumentalist connotation. Clearly, the authors assume that policy-oriented learning can be deliberately stimulated, designed and implemented to achieve certain policy-relevant objectives. These objectives can be divided into two aspects which have a close relationship to innovation: change and improvement of (existing) policies.

Analogous to behaviorist psychological perspectives on learning, an increase in knowledge must lead to changed behavior. Many scholars indicate that policy-oriented learning emerges when an increase in knowledge leads to a change in policy (cf. Eberg, 1997; Lee, 1993; Sabatier, 1993). A difficulty with this view is the matter of measurability: a change in policy is not always due to an increase in knowledge. Frissen (2000) indicates that more knowledge often increases the amount of uncertainty, and uncertainty is surely not desirable when it comes to policy-making. The question of whether knowledge has contributed, and if so, to what extent, to a change in policy, remains unanswered in many cases. Next to policy change, policy-oriented learning is frequently affiliated with policy improvement. Thus, it is assumed that policy-oriented learning leads to better policies. This assumption is largely

6 with which is assumed that in this context the exchange of information, opinions, ideas and interests can take place in an open and free way. One can imagine that if this exchange is hindered or frustrated, the acceptance and support for the policy guidelines will decrease.

derived from Argyris and Schön's (1978: 2) definition of organizational learning, that is, "the detection and correction of errors and imperfections". This definition is also advocated by Van der Knaap (1997).

The difficulty with improvement as an attribution of policy-oriented learning is that it is a highly subjective and situated term. Improvement can be related to goal achievement and/or the efficiency of policies, as well as the contribution of policy instruments to problem solving⁷. Moreover, policies are developed and implemented in networks of policy actors who all have their criteria for evaluating the substantive quality of the improved policy. As a consequence, a change in policy as a result of policy-oriented learning can lead to an improved policy for one (group of) policy actor(s), but may be perceived as deterioration for others. In addition, the vehicle through which the new policy is achieved, the policy process, is also subject to continuous evaluation by the policy network actors. This evaluation may refer to the procedural quality of the improved policy, indicating and determining the degree of acceptance and support for the new policy.

With my previous assumption in mind, that it is the individuals acting in organizations and networks who learn, and the observation of many scholars that the individual dimension of participatory policy processes (i.e. policy practice) is a vital component of governance and innovation in a networked policy environment society, we cannot escape the necessity of looking into the question of how individuals learn. This is examined in the next section.

6.6

LEARNING IN ORGANIZATIONS: INDIVIDUAL LEARNING

As we have seen in the previous section, the individual dimension – within the social context of an organization – is crucial for gaining a clear view of the relationship between individual and social learning in an (inter-)organizational context. Collective learning, and thus organizational learning, is impossible without individual learning. A collective is a collection of individuals: the individuals are both constitutive and representative of the collective. A collective generates, spreads and exchanges knowledge through its individuals. Organizational learning, as such, is an empty concept; it's the individuals within an organization who learn and can act together as a collective.

It is interesting to elaborate on how this mechanism of exchanging knowledge between the individual and the collective becomes manifest. To do so, we must take a look at Michael Polanyi's book *Personal Knowledge, Towards a Post Critical Epistemology* (1962). According

7 According to Verbeeten (1999) the difference between goal achievement (doelbereiking) and effectiveness, the former definition, policy instruments are not taken into account, is in contrast to the latter.

to Sveiby (1997⁸), Polanyi used this title because he wanted to underline that “[human] intellect is connected with a ‘passionate’ contribution of the person knowing”. As a consequence, emotions are acknowledged to be a vital component of the person’s knowledge base. However, the incorporation of emotions does not make our understanding subjective⁹. Personal knowledge is not similar to subjective opinions because it is rooted in tradition and language which both are “systems of values outside the individual” (Ibid.). Polanyi divides knowledge into tacit versus objective knowledge. He poses that tacit knowledge is largely incommunicable. Tacit knowledge is so profoundly personalized and internalized that communication leads to loss of information. In contrast, Spender (1996: 58) considers tacit knowledge to be “not yet explicated knowledge”. He argues that tacit knowledge can be explicated and therefore, communicated. He shares this opinion with Nonaka (1990) who presents a procedural model that explains the relationship between tacit and explicit knowledge by explicating four types of transformations between tacit and explicit dimensions of knowledge: socialization, articulation, combination and internalization. Socialization emerges when tacit knowledge about behavior and rules is learned by interacting with and observing other people. Articulation of the acquired tacit knowledge is achieved when tacit behavior and rules become formally advocated and communicated. Thus, through articulation, tacit knowledge becomes explicit knowledge. Combination takes place when the (new) explicit knowledge is combined with already existing explicit knowledge. New, formally communicated knowledge is supposed to be known and applied in the organization. Lastly, internalization of the (new) explicit knowledge leads to the integration of new rules and techniques into our behavior and practice, becoming part of our individual, tacit knowledge.

Spender (1996: 59) thinks that “knowledge becomes evident in the collective language and practices that are understood and communicated to other members of the society, but it never captures the immediacy of individual experience”. However, this knowledge will never reach the inevitability of personal, individual knowledge. This viewpoint is derived from Polanyi who claims that tacit knowledge, produced by undertaking activities, remains personal and is incorporated into the practical knowledge of the person involved. Practitioners generate knowledge in their daily practice. New knowledge is added to previous (practical) knowledge (e.g. by the mechanisms described by Piaget) and thus, a unique, personal and continuously evolving knowledge base is created. Vygotsky (1962) states that this personal knowledge base has a social dimension because it is applied through language and has its value in social structures. This implies that tacit knowledge becomes part of the (collective) consciousness of a group of practitioners. The exchanging and sharing of (explicated) tacit knowledge by members of a group of practitioners results in a jointly constructed and shared

8 See: <http://sveiby.com/articles/Polanyi.html>

9 As if this would be a disqualification of the value of understanding and knowing.

knowledge base that is used for the formation of opinions and decisions and, thus, leads to an important component in the policy process.

Explication of tacit knowledge plays an important role in the exchange of knowledge between individuals. It is worthwhile to discuss the characteristics of tacit knowledge. Spender (1996) points at the automatic element of tacit knowledge. The owner of tacit knowledge applies this taken-for-granted knowledge without difficulty in carrying out daily tasks and solving practical problems. Knowledge application is a subconscious, intuitive activity. Polanyi (1962) subdivides the automatic aspect of knowledge into two components: focal (conscious) and subsidiary (unconscious) awareness. These components emerge when performing a (routine) task: the conscious awareness is centered on achieving the task itself (reaching the desired result); the unconscious awareness is reserved for the way the task is carried out (e.g. by using tools).

The previous deliberations perceive tacit knowledge as individual knowledge. The process of acquiring (new) tacit knowledge through undertaking activities in a social context can be called individual learning. It is interesting to investigate the existence of collective forms of tacit knowledge, for example in organizations. Simon (1987) denies the existence of subsidiary organizational tacit knowledge by arguing that intuition is nothing more than analysis frozen into habit (cf. Spender, 1996). For Simon, there is no reason to assume that organizational tacit knowledge exists. In contrast, Spender (Ibid., p.62) acknowledges a collective aspect in tacit knowledge because it is knowledge which is “developed by the individual and shared with others, and which is part and parcel of the social system” (in which the individual is functioning). In this view, tacit knowledge is not limited to the individual but is part of a social system in which the individual functions. Tacit knowledge is embedded in the social environment in which it has meaning. Spender assumes that there is an interconnection between individual and organization with regard to acquiring and exchanging knowledge. This is supported by the theory of Nonaka and Takeuchi, described in The Knowledge Creating Company (1995). In this book, four types of knowledge transformation processes are studied in various Japanese companies. They distinguish four types of processes to distinguish transformation from tacit to explicit knowledge and vice versa.

From the previous explanations it may be concluded that personal and organizational knowledge are coupled without being connected in a one-to-one relationship. Personal knowledge *can* be part of organizational knowledge but this is no necessity – and vice versa. The extent to which tacit knowledge is translated into explicit knowledge and vice versa depends on the extent to which tacit knowledge is explicated and/or internalized (cf. Nonaka, 1990; and Nonaka & Takeuchi, 1995). Tacit knowledge is more or less assumed to be similar to the practical knowledge of individuals in organizations.

Organizational learning has been, for some time now, a subject of intensive study. Especially after accepting that we live in an information age (cf. Castells, 2000), which implies that knowledge is a vital resource for any organization, much attention has been given to studying knowledge exchange in and between organizations. This includes a strong incentive for explicating and disclosing the tacit knowledge of successful practitioners in order to gain a competitive advantage and full-fledged use of the workers' capabilities. However, from the previous considerations, it remains uncertain whether these efforts live up to their expectations. Polanyi tends to think that the explication of tacit knowledge is useless because of its loss of information, whereas Nonaka and Takeuchi and Spender argue that it is worthwhile to at least try to organize this.

6.7

THEORETICAL INTERLUDE: A RELATIVIST/ PRAGMATIST INQUIRY OF LEARNING

The previous paragraphs give some indication about the relationship between the learning individual and the (social) environment in which the learning takes place, for example a family, a school, an organization or a policy network. Learning primarily has something to do with the individual, since it is the individual who learns and it is a collection of individuals who, together, create the social environment. However, Spender's statement (1996) that all knowledge is constructed suggests that learning is not an individual activity. The construction of knowledge takes place in interactions with an environment. Or as Bredo (1994: 4) states: "Rather than a person being 'in' an environment, the activities of person and environment are viewed as parts of a mutually constructed whole; put simply, the inside/outside relationship between person and environment is replaced by a part/whole relationship". No individual is capable of learning without the presence of an environment which provides stimuli and experiences that provoke learning and in which this learning has meaning and applicability towards certain goals. Maturana and Varela (1987: 46-47) pose that "beings are at the same time not independent of their environment, but structurally coupled with it, they conduct their interchange with the environment by way of symbolic interaction". This means that knowledge only has its value and relevance in a certain environment. What is relevant knowledge in one context may prove to be obsolete and useless in another. This observation calls for a relativist/pragmatist way of dealing with all aspects discussed in the previous paragraphs that together form the concept of learning.

In line with the considerations on processes of participatory policy analysis and innovation in the previous chapter, I argue that a relativist/pragmatist perspective on learning should also apply. This is based on Maturana and Varela's (1987) observation that individuals will

not collect information as given objects but only through their own rules of interpretation. This means that learning is not an absolute entity that can be fully predicted and controlled. Consequently, learning may be considered a relativist activity in the sense that it is closely related to the idiosyncratic mental framework and state of mind of each individual (or organization, if you will) involved. Their observation is vital 'evidence' for the validity of multiple perspectives in cognition and learning. It doesn't seem possible to give shape to learning from the construction and implementation of some kind of master scheme which determines what and how individuals should learn. Apparently, there are serious indications that what is learned is highly dependent on the interaction between individual and his/her context, i.e. the social environment and previous experiences. This means that learning is highly individual and situated in a specific context.

Although it is my proposition that it is the individual that is learning and not the organization, this does not mean that the organization is not relevant for learning. The organization provides the social context in which learning takes place. The organization provides the stimuli, the purpose and symbolic context, idiosyncratic meanings, values and rituals in which learning emerges and has meaning for the learning individuals. Thus, learning is individually defined, and the learning environment is socially defined. This distinction between individual and social is valid, in other words they are meaningless without each other. Bredo (1994) advocates not separating the individual from its social context with regard to learning. It is therefore appropriate to speak of embeddedness (cf. Granovetter, 1985) to describe the inseparable relationship between individual and organization when learning is the object of study.

I argue that this viewpoint with the acceptance of the sole learning capacity residing at the individual may be considered being part of the constructivist perspective on learning. So, emphasis on the individual dimension of learning does not mean that the behaviorist or the cognitivist perspective prevails. On the contrary, in my view, the constructivist perspective forcefully refers to the relativist/pragmatist nature of learning. The social context that is conditional for individual learning is neither identical to prior situations nor fully controllable. As a consequence, *what* is learned is not predictable but is, at best, described on some level of expectations. This observation leads to the abandonment of a modernistic approach to learning towards a more pragmatic approach. To elaborate on this relativist approach to learning, I turn to two philosophers who have made relevant remarks on this matter: Michael Polanyi and John Dewey.

6.7.1

PERSONALIZED LEARNING AND KNOWLEDGE: THE PHILOSOPHY OF MICHAEL POLANYI

Polanyi's thoughts on learning are grounded in his view on the learning of traditional practices (what he calls 'arts'), a type of learning that takes place within a master-apprentice con-

text. Polanyi uses the concepts of tradition and master-apprentice relationships in a realistic manner. This may seem somewhat outdated and, therefore, I would like to look upon it in a more metaphoric way. Thus, master and apprentice could be accepted as metaphors for the individual who transfers knowledge ('teacher') and the individual who receives and applies it ('learner'), respectively.

Even with these metaphors, the relevance of Polanyi's ideas remain in tact. First, submitting to a tradition of a socially established art demands an enculturation of persons that make up the practice associated with it. The individuals participating in this practice share language, actions, rules, norms and values. According to Sveiby (1997: 4) "tradition is a system of values outside the individual. Both language and tradition are social systems which take up, store and convey the knowledge of society". Second, in a tradition there is a clear placement among its participants, a hierarchy in the master-apprentice scale. In this sense, the apprentices are individuals who submit themselves to an authority, the master, in a relationship that involves legitimacy, credibility, trust and confidence. We understand that, at the first moment of that submission, the learning can be acritical, as Polanyi phrases it: "The apprentice initially relies on his master and surrenders to his knowledge, without questioning, because he attributes to the master the legitimacy of his way of acting". However, at a second stage, the apprentice is able to reconstruct the master's version of knowledge, as well as judge the master's competence. Finally, when the apprentice is able to preserve the ideals of the tradition, he is then liberated: the master-apprentice relationship changes or is suspended. In other words, the learning process stops. Thus, the formation of knowledge within a tradition takes place locally (in the master-apprentice relationship) as well as professionally (in the performance within the traditional practice). This suggests that an individual is not competent *per se*. In contrast, it is in the function of his role or performance within a social context that a (degree of) competence will be attributed to him. The success or failure of an individual in a specific community is based on that which causes him to be recognized as competent. Thus, we can say that tradition is not a mere stimulus that activates or triggers the learning process of an individual's personal knowledge but it is constitutive of a part of that knowledge. The individual acquires part of his personal knowledge through an immersion in practice. This, in turn, implies a delimitation of the learning process: a great part of the tacit knowledge of an art is preserved in the tradition. The following citation from Personal Knowledge (1962: 26) illustrates Polanyi's perspective on learning described above:

An art which cannot be specified in detail cannot be transmitted by prescription, since no prescription for it exists. It can be passed on only by example from master to apprentice. This restricts the range of diffusion to that of personal contacts. For example, while *the articulate contents of science* are successfully taught all over the world in hundreds of new universities, *the unspecifiable art of scientific research* has not yet penetrated to many of these. To learn by example is to submit to authority. You follow your master because you trust his manner

of doing things even when you cannot analyze and account in detail for its effectiveness. By watching the master and emulating his efforts in the presence of his example, the apprentice unconsciously picks up the rules of the art, including those which are not explicitly known to the master himself. These hidden rules can be assimilated only by a person who surrenders himself to that extend uncritically to the imitation of another. A society which wants to preserve a fund of personal knowledge must submit to tradition... we accept the verdict of our appraisal, be it at first hand by relying on our own judgment, ... or at second hand by submitting to the authority of a personal example as carrier of a tradition.

That criticism of Polanyi's perspective surfaced is obvious. He regards tradition as a process in which the master is always older (in age) than the apprentice. Furthermore, the specific interactions (or chemistry) between master and apprentice and among apprentices are not addressed. In his description of tradition, the learning process is a one-way process, from master to apprentice(s). This criticism can be mitigated by accepting a more metaphoric view of the concept of learning from tradition and the master-apprentice relationship. By regarding tradition as a professional practice and acknowledging that 'master' and 'apprentice' are roles that emerge in any learning process, and can be taken on by anyone in a given situation, Polanyi's concept gains a broader applicability and loses its historical, somewhat outdated, meaning.

What remains is Polanyi's reference to the concept of tacit knowledge. Polanyi states that tacit knowledge is characterized by its incommunicability. The character of tacit knowledge is perhaps best described by expressing its distinction from explicit (or focal) knowledge. Tacit and explicit must not be considered as two different types of knowledge, but as two dimensions of (the same type) knowledge. The distinction between tacit and explicit knowledge is also referred to as a corresponding distinction in embodied and theoretical knowledge. Explicit or focal knowledge is what Ryle (1949) calls "knowing-that". According to Ryle, knowing-that involves consciously accessible knowledge that can be articulated and is characteristic of the person learning a skill through explicit instruction, recitation of rules and explicit attention to his/her (physical) actions. In contrast, tacit knowledge is described by Ryle as "knowing-how". Knowing-how is characteristic of the *person* (author's emphasis – Ryle speaks of the expert), who acts, makes judgments, and so forth, without explicitly reflecting on the principles or rules involved. The person just performs skillfully without deliberation or focused attention. In line with Ryle's definitions, Sveiby (1997: 2) describes focal knowledge as "knowledge about the object or phenomenon in focus", and tacit knowledge as "knowledge that is used as a tool to handle or improve what is in focus". Sveiby's description makes clear that the focal and tacit dimensions of knowledge are complementary: the tacit dimension of knowledge serves as background knowledge which assists in accomplishing a task that is in focus. This idea is inspired by Polanyi's proposition that "all knowledge is either tacit or rooted in tacit knowledge" (cited by Sveiby, 1997: 2).

Although even personalized learning dynamics lead to knowledge that is constructed and has meaning in a social context, it remains vested in individual mental frameworks (cf. Piaget). So, although knowledge is acquired and processed in a social context, it cannot be separated from the knowledge-acquiring individual. Therefore, the constructed knowledge can never be found, represented and/or applied objectively without personal inference bias. Concepts such as personal knowledge, embodied knowledge or knowledge as performance stem from the pragmatic epistemology that is also advocated by Taylor (1991: 309) who states that “our understanding itself is embodied. That is, our bodily know-how, and the way we act and move...”. Rothfork (1995: 3) agrees when he writes that “personal knowledge suggests that knowledge is never entirely a state of mind, but always originally grounded in embodied action”. He advocates that in applying the term personal knowledge, equal stress must be put on both parts “to avoid reductionism in either direction: into fuzzy inter-subjectivism and taste or sterile formalism”. This pragmatic view of knowledge as being embodied in human experience and performance claims that knowledge is never vested in Platonic abstractions or moral principles (referring to sterile formalism), nor can it be reduced to idiosyncratic fantasy or individual taste (referring to fuzzy subjectivism) (cf. Rothfork, 1995).

The embodied experience is profoundly subjective. Yet, as knowledge, it is necessarily public, i.e. something discussable. Embodied experience becomes knowledge when is put into action and/or is communicated to others. One might say that discourse regarding personal knowledge (based on experience) stimulates the exchange of that knowledge, perhaps leading to new interpersonal, inter-subjective knowledge. In this respect, the interaction between individuals regarding their knowledge of a problematic situation, can be perceived as an experience in itself, thus leading to new knowledge. I argue that this mechanism can be recognized by anyone, as it closely resembles human nature with regard to the way individuals learn – by continuously constructing and reconstructing their knowledge. If we suppose that all individuals recognize this mechanism (and according to Dewey they do), there is some common ground to work from, pulling away from fuzzy inter-subjectivism with regard to learning. On the other hand, the result of this humanly recognizable mechanism of how learning takes place, can never be predicted or controlled. The process of learning (as an interpersonal discourse) can be represented but the outcomes of that process will never be.

What does this tell us about the function of knowing in, for example, policy analysis and innovation? Polanyi (1962: 312) indicates that “into every act of knowing there enters a tacit and passionate contribution of the person knowing what is being known”. However, his proposition is by no means a plea for dissolving “the objective reality of the objects of science into metaphors, paradigms, discourse and perspectives illustrated in Thomas Kuhn’s The Structure of Scientific Revolutions” (Rothfork, 1995: 10). On the contrary and, in contrast to Rorty, Polanyi claims that a scientific proposition is an aspect of nature seeking realization in our minds. Although Polanyi’s theory on how knowledge is produced, transferred and

stored can be considered to reside within the relativist/pragmatist perspective, the purpose of the acquired knowledge seems to be to represent nature. This contradicts with Rorty's view that advocates 'the renouncement of science as a mirror of nature'. But Rorty (1989: 4-5) himself more or less solves this contradiction by advocating "a distinction between the claim that the world (nature) is out there and the claim that truth is out there".

What makes Polanyi's view of learning pragmatic? He points accurately to the personal, tacit dimension of learning. Each individual has its own frame of reference to which new knowledge is evaluated, added or modified (cf. Piaget). As earlier indicated in Section 6.2, these inner mental processes cannot be represented, studied or controlled, leaving the outcomes unknown. The tacit, personal dimension in learning consequently leads to different learning processes and outcomes in different situations. So, coping with each different problematic situation will lead to an entirely different learning process. This brings us to the conclusion that Polanyi's view on how learning takes place resides within relativist/pragmatist perspective, but his view on the intended outcomes of this pragmatic process is (still) close to representationalism. For the relativist/pragmatist inquiry in this dissertation, Polanyi's view of how people learn is valuable, but his proposition regarding to what end they learn, is not.

6.7.2

LEARNING FROM EXPERIENCE: DEWEYAN PRAGMATISM¹⁰

Both the interactionist perspective on learning and the concept of experience are inspired by the work of John Dewey, one of the founders of what is called American pragmatism. Interactionism and experience appear to be highly interrelated, which is argued in the following. The interactionist perspective is based on the theory of action which is inspired by Dewey, Mead and the tradition of the so-called Chicago-trained sociologists (Elkjaer, 1999). The theory of action explains how to conceptualize action, or rather *acting*, as action is viewed as an ongoing process. Action and experience – as an integral part of action – are viewed as a continuous process. Routine actions may be interrupted by incidents and lead to a reorganization of those actions. Thus, social stability and social change are intertwined, and therefore process and structure could be considered as constituting each other (Elkjaer, 1999). In short, action and interaction lead to experience, and experience leads to learning.

Before elaborating on Dewey's theory of learning, an introductory description of his theory of knowledge is provided as a framework for his ideas of learning from experience. Dewey's theory of knowledge (cf. Field¹¹) starts off by rejecting the term 'epistemology' to describe the mental efforts that provide a theory of knowledge. Instead, he prefers to speak of

10 Cf. Bredo, 1994; Schön, 1983.

11 The Internet Encyclopedia of Philosophy, <http://www.iep.utm.edu/d/dewey.htm>. Author: Richard Field – Northwest Missouri State University. Retrieved on June 12, 2004 and February 6, 2009.

the theory of inquiry or experimental logic to represent his approach to learning processes. In contrast to Descartes and Locke, Dewey claimed that facts and thoughts (ideas) are intertwined. Descartes (who according to Field represents modern rationalism) and Locke (representing modern empiricism) both advocate that the world of thought (ideas) exists apart from the world of facts. However, they assume a different starting point. Descartes starts from the formulation of innate ideas that are indispensable to discovering facts; Locke structures facts (empirical material) into a representational theory of ideas. Dewey rejects this traditional dichotomy, claiming that the world of facts does not exist apart from the world of thought (the domain of knowledge) but is itself defined within thought as its objective manifestation.

Following Darwin's naturalistic views on the complex interrelation between organisms and environments, Dewey formulated a similar, naturalistic view of the development of knowledge. He assumes that the development of knowledge is an adaptive human response to environmental conditions aimed at an active restructuring of these conditions. Thus, in Dewey's view, thought is the result of the interaction between the organism (i.e. human individual) and its environment. Therefore, knowledge has an instrumental function in the guidance and control of that interaction, and Dewey adopted the term 'instrumentalism'¹² to characterize his approach to learning. In Dewey's (1896) view, individuals interact with the world through self-guided activity that coordinates and integrates sensory and motor responses. For the theory of knowledge, this means that the world is not passively perceived and thereby known; instead, active manipulation of the environment is an integral part of the process of learning¹³. Dewey's theory of interactive naturalism was first applied in his *Studies in Logical Theory* (1903) by which he entered the school of pragmatism, crediting William James as its progenitor. The process of learning, which Dewey referred to as the process of inquiry, which is within the interactive naturalist (or pragmatist) view on how knowledge is produced and applied, is composed of three stages.

First, there is the problematic situation which Dewey defined as a situation in which instinctive or habitual responses by humans to the environment are inadequate for the continuation of ongoing activity in pursuit of the fulfillment of needs and desires (The Internet Encyclopedia of Philosophy, 2009: 4¹⁴). The uncertainty of the problematic situation is not inherently cognitive, but practical and existential. Cognitive elements enter into the process as a response of precognitive maladjustment. So in Dewey's view, when confronted with a problematic situation, humans initially pose practical and/or existential questions, before cognitive ones. If we return to his instrumental approach to the theory of knowledge, the

12 Please notice the difference between Dewey's pragmatic idea of instrumentalism and its modernistic counterpart derived from world views dominated by the natural sciences and engineering. Unfortunately, the latter has extensively intruded on the field of public policy analysis and innovation.

13 The Internet Encyclopedia of Philosophy, 2004/2009, p. 4.

14 Retrieved February 2009.

required cognition is necessary to deal with the practical and/or existential uncertainties (cf. Dewey, 1903). Second, the process of inquiry involves isolation of the data or subject matter which defines the parameters within which the reconstruction of the initiating problematic situation must be addressed. Looking at Dewey's instrumentalist approach to the theory of knowledge, we see that the development of knowledge is aimed at an active reconstruction of the conditions which, together, comprise the environment surrounding the human individual. So the required knowledge is used instrumentally to reconstruct the rising problem situation and serves as a problem-solving strategy. Third, the process of inquiry involves reflecting on cognitive elements as if they were hypothetical solutions to the original impediment of the problematic situation (Ibid., p.4). The adequacy of these solutions is tested by their employment in action: if reconstruction of the problematic situation is achieved by taking action, then the solution no longer has the character of the hypothetical that marks cognitive thought, rather, it becomes integrated in the context that surround the reconstructing (group of) human individual(s). Or in other words, ... it becomes a part of the existential circumstances of human life (Ibid., p.4).

Dewey's process of inquiry can incorporate both common sense or lay knowledge and scientific knowledge. The latter is only set apart from the former by the precision of its data collecting methods and the refinements of its hypotheses. This makes the process of inquiry applicable to all sorts of learning processes. Dewey applied the theory to his well-known and appreciated theories on education. Elkjaer (1999: 84) interprets Dewey's account of learning as follows "a continuous reorganization and reconstruction of experience". This definition is elicited in the following quote:

To learn from experience is to make a backward and forward connection between what we do to things and what we enjoy or suffer from things in consequence. Under such conditions, doing becomes a trying; an experiment with the world to find out what it is like; the undergoing becomes instruction – a discovery of the connection of things... (1) Experience is primarily an active – passive affair; it is not primarily cognitive. But (2) the measure of the value of an experience lies in the perception of relationships or continuities to which it leads up. It includes cognition in the degree in which it is cumulative or amounts to something, or has meaning (Dewey, 1916: 140; cited in Elkjaer, 1999: 85).

In Dewey's view, learning takes place all the time, and in all situations where people act and interact, think and reflect. He perceived learning as a process of reflective experience in which a person is confronted with a problem which makes him stop and think. Based on previous knowledge, a person undertakes action to solve this problem and then considers or rethinks the outcome of his action. If the outcome is positive (the problem is solved), the person will undertake similar actions when confronted with a similar problem, or will alter his actions when the outcome turns out to be negative (the problem remains unsolved). The

interesting aspect of focusing on experience, with regard to learning, is that it focuses on the individual. Although learning takes place in social environments, such as organizations, it is the individual who learns through reorganizing and reconstructing his/her experience.

What does this tell us about the function of knowing in, for example policy analysis and innovation? Dewey's notion of learning could be considered a continuity of acting and knowing. It seems to have a strong resemblance to the incrementalist approach to policy analysis (e.g. Lindblom, 1959) and to concepts of trial and error or learning by doing. Thus, experience does not derive from mere action or mere doing, and it is not only based on change, but on change which implies reflection on former actions in order to anticipate future consequences and/or actions (cf. Elkjaer, 1999). With regard to enhancing organizational learning, this reflection on former actions should be a joint reflection among team members. Learning theory according to Dewey involves both actions and cognition, and actions without cognition are of little value to learning. Dewey's learning theory is composed of:

- A continuous process of acting and knowing (thinking and reflecting);
- A problem-oriented perspective. The encounter with a problem that makes us stop and think and, by means of reflection, change our practice;
- A language to convey the things learned. A language enables the learner to generalize about specific actions and communicate the message through signs, words and concepts to him/herself and others.

What makes Dewey's view on learning (based on his theory of knowledge) pragmatic? Dewey accepted fallibilism, a characteristic of the school of pragmatism. As explained in Chapter 4, fallibilism is the view that any proposition accepted as an element of knowledge has this status only provisionally, contingent upon its adequacy in providing a coherent understanding of the world as a basis for human action. In other words, Dewey advocated the existence of a preliminary idea of what is going on – what is the problematic situation at hand – as a basis of doing something. Clearly, Dewey did not believe it to be possible to have a complete and immutable assessment of a problematic situation and its possible solutions. The mere assumption of an undesirable situation starts the process of inquiry, or should we say, the process of sense-making? (cf. Weick et al., 2005). The problem orientation as well as the reflexive nature of Dewey's process of inquiry indicates, in my view, a strong connection to the process of sense-making. This connection is strengthened by their mutual reliance on language (narration) as a practical vehicle for these processes.

6.7.3

RECAPITULATION: CAN THE PUBLIC POLICY DOMAIN LEARN?

The question of whether the public policy domain is capable of learning is the subject of many discussions and studies (see e.g. WRR, 2006). Can the public domain and its consti-

tuting public policy actors learn? I tend to answer this question affirmatively based on two preconditions. My first precondition is that we should accept the neutral definition of learning that adheres to the idea of change (cf. Burns, 1995; Barker, 1997; Guthrie, 1942). Learning means a change in behavior and/or cognitive structure (cf. Lewin, 1954) and is largely driven by a reflection on experiences. For the public policy domain, this means that learning can be perceived as changing in the face of evolving societal circumstances. The continuous process of adjustment and re-adjustment that characterizes the public policy domain can be defined as learning.

An evaluation of previous policy experiences often leads to the (political) conclusion that change is necessary. Politicians and policy-makers come to the conclusion that the societal circumstances have changed, inducing the public policy domain to change accordingly. This perceived need for change drives the policy process. This process could lead us to believe that, eventually, learning would no longer be necessary because we had reached an optimal situation in a specific policy domain. The outcomes of these change processes, manifested in policy-making, can be the reason for initiating yet another change process.

However, I argue that, next to accepting the first precondition, we should avoid the tragic connotation that learning (always) leads to progress, improvement or advancement. Learning can prove to be negative or undesirable when evaluated from another perspective or advanced insight, e.g. by evaluating the outcome of previous policies. This is explained by my second precondition which acknowledges the relativist nature of learning. Learning has an ironic relationship (cf. Rorty, 1989) with its purpose or objective. Learning is never definite. There is no central position to prescribe what is to be learned. What is learned and for what purpose is not given, but learning is the outcome of continuous negotiation and interpretation. The impact of learning will be evaluated from different perspectives, leaving its appreciation in the eyes of the beholder. Thus, learning is always relative, depending on whether change processes are recognized as such.

To summarize, the public policy domain can learn and this learning can be recognized in the numerous and continuous change processes that characterize it. Learning in the public policy domain has an ironic, provisional relationship to its purpose or objective, e.g. a changed societal circumstance and/or the undesirable outcome of an existing policy effort.

6.8

PRAGMATIC VIEW ON LEARNING: LEARNING-IN-PRACTICE

Collective learning, and thus organizational learning, is impossible without individual learning, because a collective generates and transfers knowledge through its individuals. Organizational learning as such is an empty concept, it's the individuals within an organi-

zation who learn and can (decide to) act as a collective. Why is the individual dimension of such high importance to the study of organizational learning? Brown and Duguid (1991) give an explanation that I interpret as follows: The importance of the individual dimension results from the conclusion that although groups of practitioners – e.g. across different organizations – become communities of learning, it is still the individuals who learn and become insiders. In doing so, they contribute to the differences and similarities between the collectives. Brown and Duguid point to the importance of communities of practice in which learning experiences, new knowledge and innovations are exchanged between individual practitioners in the work field concerned.

6.8.1

THE CONCEPT OF COMMUNITIES OF PRACTICE

Jean Lave and Etienne Wenger (1991) introduce the concept of communities of practice in their book *Situated Learning: Legitimate Peripheral Participation*. In this book they discuss the ways people learn when working with others, thus forming a community around an evolving work practice. Ever since their concept's introduction, many qualities and functions have been attributed to it, altering its definition and purpose. A recent definition was offered by Wenger¹⁵: “communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly”.

Let's take a closer look at communities of practice by assessing the three dimensions that should be present in social environments in which people act together (Wenger, 1998¹⁶).

First, in communities of practice, the joint enterprise (i.e. the joint practice) is understood and continually renegotiated by its members. Second, this joint enterprise results in a mutual engagement that binds members together into a social entity. Third, this social entity is supported and sustained by the shared repertoire of communal resources and developed by the members over time. Members of a community are tied together by joint action and by what they have learned through their joint involvement and interaction. This means that being involved in practice results in becoming a member of a community, and being involved in practice will inevitably result in learning.

Wenger stipulates that communities of practice are fundamentally self-organizing because the practices reflect the members' own understanding of what matters, thus developing their own response to external influences. Even when a community is established by formal decision, and its actions conform to the formal mandate, it is the community that produces the actual 'work floor' practice, and not the formal decision or mandate. Based on Orr (1996) and Brown and Duguid (1991), I presuppose that formally prescribed practice will even-

15 Retrieved from his website on February 26, 2008.

16 Retrieved from <http://www.co-i-l.com/coil/knowledge-garden/cop/lss.shtml>, on July 15, 2005

tually, at least partially, evolve into actual, non-canonical practice and, subsequently, into actual, non-canonical communities (see Section 5.3.3).

Communities of practice are present in any organization and any inter-organizational network. Membership is based on involvement in actual practice and not on formal positions. There are no formal constraints in becoming a member, allowing communities of practice to span institutional structures. However, communities of practice are not new organizational entities. They are an alternative collective for formal (inter-)organizational structures. The boundaries of communities of practice are obviously more flexible and contingent than those of formal organizational units. Workers can be involved in different ways and to different degrees. Communities and their members are defined by shared knowledge and meanings, rather than by shared tasks or projects.

Communities of practice engage their members in a collective process of knowledge construction, (re-)adjustment, and transfer which is often referred to as learning. Workers learn (subconsciously) because this has practical value for their own individual performance. A community of practice can be understood as an informal (inter-)organizational network with the clear objective of getting the job done. It is a set of (inter-)organizational relationships with a purpose and a shared identity. Wenger (1998) argues that communities of practice as informal fabrics of organizational activity, support the workers' formal obligations within organizations. Workers construct the knowledge that is necessary in order to perform in (formal) organizational units, to carry out their (prescribed) tasks, and to develop their (assigned) relationships. In doing so, say Orr (1996) and Brown and Duguid (1991), workers create communities that go beyond formal organizational configuration. These maverick communities (Ibid., p. 50) are valuable because they make formal organizations function effectively. However, they are often perceived as counterproductive to the formal organizational processes, as they are reluctant to follow the prescribed line of conduct.

The presupposed value of communities of practice is explained by Wenger's (1998: 5) four functions that communities of practice (are supposed to) have for formal organizations. First, they are nodes for the exchange and interpretation of information. Communities of practice serve as an effective medium for spreading useful information on practical challenges across organizational boundaries. The vehicle for this is, of course, storytelling (see also Section 5.3.3). Second, they retain knowledge in living ways, which means that knowledge responds to local circumstances and is of immediate use to the workers involved. This refers, of course, to Polanyi's theory on tacit knowledge and on initiating newcomers to a practice¹⁷. Third, they can keep competences in the organization up to date with the requirements, made by the internal and external environment. By discussing and exchanging new

17 The process of learning between master and apprentice.

ideas, skills and information, community members develop their collaborative, practical capacities. Fourth, they provide a refuge for workers' identities. Identity is an important factor for determining information, processes and relations that are relevant to the (evolving) practice. Bear in mind that formal units and processes within an organization tend to reflect the temporal rationality of management. Communities of practice, however, mirror what matters to people on the work floor. Identity is a valuable commodity in times of change and transformation. For example, restructuring processes within organizations may disrupt formal procedures and structures, leaving workers with nothing left to rely on for getting the job done but their identity as a member of an informal community. Hence, in these situations, communities of practice are capable – by their flexible and adaptive nature – of keeping an organization afloat, explicitly proving its value for organizational survival.

6.8.2

LEARNING IN COMMUNITIES-OF-PRACTICE: LEGITIMATE PERIPHERAL PARTICIPATION

Many theories view learning from the abstract stance of pedagogy. Education or instruction is thought of as the transmission of explicit, abstract knowledge from the head of someone who knows to the head of someone who does not (cf. Bredo, 1994). The setting for learning is simply assumed not to matter. Learning is supposed to take place in situations that exclude the complexities of practice and the accompanying communities of practitioners. Lave and Wenger's (1991) concept of legitimate peripheral participation provides one of the most versatile accounts of this social-constructive view of learning. Legitimate peripheral participation is not a novel method of education but an analytical category for understanding learning across different methods, different historical periods, and different social and physical environments. It attempts to account for learning, not teaching or instruction. It makes the conditions for learning, rather than just abstract subject matter (i.e. the substance), central to the understanding of what is learned. Legitimate peripheral participation seems to be adequate to gain more understanding for work-floor learning.

When we take a closer look at this concept, we find that it has two main properties. First, learning essentially involves becoming an insider. Second, learning becomes manifest through communities being formed and personal identities being changed. These qualities are discussed briefly here. The first property, becoming an insider, means that workers learn to function in a community, be it a community of policy professionals, carpenters, university students or, as in Orr's case study, service technicians. In contrast to the pedagogical viewpoint, learners do not receive or even construct abstract and individual knowledge but "they acquire that particular community's subjective viewpoint and learn to speak its language" (Brown & Duguid, 1991: 48). As a consequence, they are enculturated (Brown, Collins, and Duguid, 1989) with the internalized capability to perform as members of the practice-based community. In a sense, legitimate peripheral participation may be perceived as an

advancement of Polanyi's master-apprentice learning, but better adjusted to today's working situations. Hence, learners acquired the capacity to tell and appreciate community-specific stories, discovering in doing so all the narrative-based knowledge resources (cf. Brown & Duguid, 1991) as outlined earlier in Chapter 5.

The second property entails becoming a practitioner and refers to the central issue in this type of learning: not being taught about practice but being allowed to perform in practice. Becoming a practitioner in a community will inevitably influence a person's identity, in the sense that (s)he belongs to a certain group of knowledgeable. Learning is not so much about learning 'why' but about learning 'how', drawing attention away from abstract knowledge and situating it in the practices and communities in which knowledge has relevance and meaning. Learning about new practices is best achieved in the context of the community in which the practices are used and that community's particular interpretive conventions. Lave and Wenger (1991) argue that learning, understanding, and interpretation involve a great deal that is not explicit or explicable, developed and framed in a critically communal context.

Orr's study (1996) reveals that the sort of learning going on in the work process is, at the same time, inseparable from that work process. All workers involved are important participants in the process of diagnosis and storytelling. Their participation legitimately grows in from the periphery as a function of their developing understanding in carrying out a job, "and not of some extrinsically structured training" (Brown & Duguid, 1991: 48)¹⁸. Orr discovered that "occupational communities... have little hierarchy; the only real status is that of member" (Orr 1996: 142).

6.8.3

FOSTERING LEGITIMATE PERIPHERAL PARTICIPATION

Brown and Duguid (1991) argue that it is possible to recognize and understand learning, even when it cannot be detached from the context in which it takes place. They ask themselves how we may be able to foster "learning-in-working" when accepting a community-based analysis of learning, based on Orr's analysis of work practice. The answer is inevitably complex because all intricacies of context have to be taken into account. The contextual preconditions for understanding learning contrasts with the pedagogical approach which assumes that context can be stripped away from the scene. If learners need access to practitioners at work, it is essential to question didactic approaches, because of their tendency to separate learners from the right community and the actual work practices. The ability of

18 Orr's study indicates that legitimacy is an important function of the social relationships between different levels of service technicians, which are surprisingly egalitarian, perhaps as a result of the inherent incoherence of the problems this sort of technology represents: a specialist cannot hope to exert hierarchical control over knowledge that he or she must first construct cooperatively.

people to learn-in-work practice (Brown and Duguid, 1991: 49, call this “learning *in situ*”) suggests that attempts to strip away context should be examined with caution. Learning is fostered by granting access to and membership of the designated community of practice. Learning cannot be understood by explicating or explaining abstractions of individual practice. This means that central to the learning process are the recognition and legitimization of community practices. Relying solely on formal descriptions of work and canonical groups to carry out described tasks immediately set organizations at a disadvantage. Such a perspective may disconnect management to the practices and communities that actually make things happen. In particular, it can lead to the isolation of learners, who will then be unable to acquire the implicit practices required for work.

Lave and Wenger (1991: 76-79) described a case about the apprenticeship for meat cutters in which learning was extremely restricted because, among other things, “apprentices... could not watch journeymen cut and saw meat”. Based on their findings Brown and Duguid (1991: 50) conclude that “formal training in cutting and sawing is quite different from the understanding of practice gleaned through informal observation that co-presence makes possible and absence obviously excludes”. The learners were simply denied the chance to become legitimate peripheral participants because they were kept at bay. Brown and Duguid (Ibid.) conclude that “if training is designed so that learners cannot observe the activity of practitioners, learning is inevitably impoverished”. Thus, legitimacy and peripherality are intertwined in a complex way, mutually constituting and shaping each other. If learners are granted legitimacy but are denied peripherality, they may be a legitimate member of a community of workers but are not engaged in the actual practice of that community. Conversely, if they are granted peripherality but denied legitimacy, learners may be engaged in the actual practice but are not recognized as legitimate members of the designated community. Either way, if legitimacy or peripherality is denied, learning will be significantly more difficult.

A position on the periphery of practice is important for learners. Such a position is easily overlooked and increasingly risks being ‘designed out’, leaving people physically or socially isolated from the appropriate community. It is imaginable that this can make them justifiably uncertain about finding out whether their errors are inevitable or the result of personal inadequacies. Legitimate and peripheral membership in a community of workers can eliminate this uncertainty. It is a continuous challenge for organizational design to ensure that collaborative technologies, such as ICT-applications, do not exclude the implicit, informal periphery needed by (new) workers to engage in present communities. Learners need legitimate access to the periphery of communication, such as computer mail, formal and informal meetings, telephone conversations, and, of course, ‘war stories’ (cf. Brown & Duguid, 1991). Learning about historic and epic events of the community that the learner has to become part of, will undoubtedly improve his/her ability to engage in the storytelling process of the community and, therefore, will increase the chance of becoming an insider

and a legitimized practitioner. Learners pick up invaluable know-how from being on the periphery of competent workers doing their jobs. It is not just about information but also manner and technique of practicing. Brown and Duguid (Ibid., p 50) conclude that “it is important to consider the periphery not only because it is an important site of learning, but also because ... it can be an important site for innovation”.

6.8.4

REVEALING AND NURTURING COMMUNITIES OF PRACTICE

Brown and Duguid (Ibid.) argue that communities of practice are often considered to be maverick communities. However, these types of non-formal communities are necessary to keep the organization's performance¹⁹ up to speed with the continuously changing demands of the world outside. It is for this reason that Wenger (1998: 6) suggests that

we need to build organizational and technological infrastructures that do not dismiss or impede these learning communities, but rather recognize, support and leverage them.

He argues that, although communities of practice emerge spontaneously, organizations can undertake action to influence their emergence and persistence. However, it is worthwhile to remember that these communities thrive on the internal legitimacy, provided by their members, rather than on external pressure by management.

Wenger (1998: 7-8) describes four properties of an organization's cultural capacity that are favorable for “allowing communities of practice to emerge and actively watch over their development”. First, organizations should legitimize workers to participate in these alternative organizational fabrics. Wenger thinks that just by mentioning the possibility of these workers' existence in the organization it is sufficient to open up enough room for their emergence. He speaks of “an institutional discourse in the organization” (Ibid.). Second, organizations should recognize the strategic, long-term value of communities of practice, in relation to the result-oriented, short-term objective of formal project teams. Workers function in both organizational entities. However, the value of project teams is often given priority over that of the communities. Organizations and their management must, therefore, develop some sort of equilibrium between strategy on the one hand and practice on the other. This equilibrium aims at understanding what practice a given strategy requires, combined with what communities of practice indicate regarding potential strategic directions. Third, organizations should be attuned to real practices. This means that organizations must be ready to leverage existing non-canonical practice, that has additional value for formal work routines, to become canonical practice. Wenger indicates that knowledge organizations needing to advance their canonical practices are usually present in some form. The best way to reveal the

19 The same goes for the performance of an inter-organizational network.

existing knowledge potential is by fostering the formation and functioning of communities of practice within the organization. And fourth, to benefit from communities of practice, organizations must remove, or at least rethink, the elements that can hinder their emergence and continuance. These elements can be management interests, reward systems, work processes, corporate culture and policies. They are not designed to identify the formation of communities, but by fine-tuning them they can contribute to active participation by workers. This fine-tuning is perhaps not much more than making sure that existing compensation or reward systems do not inadvertently penalize the work involved in building and sustaining these communities.

Only when workers themselves perceive the deliberate need, and not the retrospective and accidental emergence, to develop a community of practice, will this concept have a chance to actually contribute to their evolving practice. The reason is quite simple: if members decide on the community's deliberate legitimacy and purpose, they will be inclined to participate and, therefore, confer and interact on behalf of advancing their practice. This makes the active revealing and nurturing of communities of practice a delicate matter. This delicacy is derived from knowing that effective communities of practice are essentially self-organizing. Participating in them is self-sustaining and self-rewarding because workers are able to do their job more accurately. Putting organizational elements in place to deliberately trigger communities of practice is contrary to its self-emergent nature. Active management of communities can violate their internal legitimacy, their practice-oriented course of action and their self-organizing capacity.

In my opinion, Wenger tends to overlook the reflexive nature of social systems, such as organizations and their communities, and of social processes, such as work practices. Intervening in what is essentially covert, subversive, and, therefore, interesting to participate in can prove to be counterproductive, undermining the value of supporting formal work processes. Therefore, Wenger's (1998: 7) remark that "it is tricky to use reward systems as a way to manipulate or micro-manage the community" is a guiding principle for a pro-active approach to communities of practice. Revealing and nurturing communities of practice presupposes that management has the talent and the capacity to productively balance the formal and the informal within their organization.

6.8.5

PUTTING COMMUNITIES OF PRACTICE BACK INTO PERSPECTIVE

The foregoing deliberations may lead one to the idea that communities of practice are the panacea for repairing everything that is wrong in today's formal organizational processes. This idea is based on the observation that the general advocacy of communities of practice tends to have a happy-go-lucky connotation. Communities of practice will emerge spontaneously, providing positive (informal) support for the (formal) advancement of both individual (worker) and collective (organization). In short, it is all good. The idea of an omnipresent

positive influence of communities of practice on the performance of both the individual worker and the organization leads to the misconception that communities of practice can be designed and implemented at will. To put the concept back into perspective, I must make some relativist remarks.

The first remark is that if communities of practice are capable of supporting development of the (formal) organization or network, surely the opposite can be the case. It is feasible that communities of practice could be counterproductive to formal performance and behavior in an organization, at least from the perspective of those who are not immersed in actual practice. This was already indicated by Brown and Duguid's observation of maverick communities that are perceived, by management, as subversive structures, undermining the prescribed ways of conduct in an organization. But can a community of practice be counterproductive to the practice it intends to support? I argue that this could be the case. When formal work procedures need to be advanced because of their poor practical use, a community can emerge, simply because workers need to get their job done, under the demands from their external environment. The anticipation of (possible) underperformance triggers workers to look for alternative practices, and, consequently, develop alternative communities. As one can imagine, these emerging maverick communities may be capable of deliberately obstructing formal routines and replacing them with alternative practices. These alternative practices can have an added value for the work floor but may be perceived as counterproductive for an organization's long-term objectives. The opposite may well be the case. Maverick communities of CEOs or politicians should be perceived as communities of practice, too. The alternative practices that they develop do not have to be in the best interest of the work force²⁰ and/or ordinary citizens.

The second remark underlines Wenger's (1998) argument that communities of practice are fundamentally self-organizing. This limits or even interferes with the possibility of deliberately designing and implementing them. Actively revealing and nurturing emerging communities of practice is the best we can do, and this even requires specific traits within the cultural capacity of an organization. And, not all organizations will be able or willing to allow these informal communities to thrive and/or to make productive use of them. For some types of organizations, think public policy agencies, at least the illusion that everything goes by the book is an important cultural trait that allows them to function.

The last remark I must make about putting the concept of communities of practice back into perspective is Brown and Duguid's (1991: 48) account of the processes that emerge in communities of practice, designated legitimate peripheral participation. They indicate that this is an analytical category. Both communities of practice, as well as the processes they produce, have a descriptive nature rather than a prescriptive one. Through legitimate pe-

20 The practice of generating shareholders' value in many private sector firms is perhaps productive from the perspective of the top-level management but may turn out to be counterproductive for the work force.

ripheral participation we can understand, in hindsight, what happens in informal, maverick communities, and what may be their contribution to the formal organizational processes.

These remarks indicate that the concepts of communities of practice and legitimate peripheral participation must be handled with care, and emphasize that their main value lies in understanding informal communities and processes in organizations and inter-organizational networks.

6.8.6

COMMUNITIES' CONTRIBUTION TO INNOVATION

One of the central benefits of self-constituting practices is that they can escape – or at least deal with – the negative tendencies of large organizations. Canonical accounts of work are not only hard to apply and hard to learn; they are also hard to change. Yet, the actual behaviors of communities of practice are constantly changing, both as newcomers replace old timers and as the demands of practice force the community to revise its relationship to its environment. Communities of practice continue to develop a rich, fluid, non-canonical worldview to bridge the gap between their organization's static canonical view and the challenge of changing its practice. This process of development is inherently innovative.

Alternative communities of this sort offer the core of a large organization a device to examine the potential of alternative views of organizational activity through spontaneously occurring experiments that are simultaneously informed and checked by experience. Several scholars have argued (e.g. Hedberg et al., 1976; Schein, 1990) that these unusual communities drive innovation by allowing organizational units to surpass the existing, limited worldview and simply try something new. Unfortunately, the management of organizations too often regard these non-canonical practices as uncalled for and counterproductive. This observation refers adequately to the difficult relationship between an organization's tendency towards stability and its need for innovation. However, innovating and learning lie in the daily activities of workers (e.g. policy professionals) who are challenged by the non-canonical issues and practices²¹ that are emerging around them. As a consequence, alternatives are inevitably distributed throughout all the different communities that make up the organization. For it is the organization's communities, at all levels, that interact with the environment and are involved in interpretive sense-making, congruence finding and adapting. From such interactions new insights can be co-produced. If an organizational core overlooks or curtails the enacting in its midst by ignoring or disrupting its communities-of-practice, it threatens its own survival in two ways. It will not only threaten to destroy the very working and learning practices by which it, knowingly or unknowingly, survives. It

21 If policy analysts conduct standardized tasks, innovation is not likely to emerge. As an aside, Orr's study shows that work that is supposedly standardized (i.e. repairing Xerox-machines) can lead to non-canonical practices and incremental innovation.

will also cut itself off from a major source of potential innovation that inevitably arises in the course of that working and learning.

The question remains, however, how the “re-registering of the environment” (Brown & Duguid, 1991: 51) is implemented by organizations that seem inescapably trapped within their own worldview. They claim that “the actual non-canonical practices of interstitial communities are continually developing new interpretations of the world” (Ibid.). These communities have a practical rather than formal connection to that world. In order to get on with their work, workers overcome the limitations of formal work descriptions and structures²² by reregistering their interpretation of a problem situation and its ever changing circumstances. Rejection of a canonical, predetermined view and the construction through narration of an alternative view bring the complex intuitive process of constructing a communicative, community schema into harmony with the environment by reformulating both. The potential for such an innovation is, however, lost on an organization that overlooks or deliberately denies the value of non-canonical practice for its survival. So, the actual sense-making, re-registering or re-interpreting of the relationship between the organization and its environment does not take place at strategic management levels. Instead, it is conceived on the work floor, where the organization meets its external environment. Thus, we might argue that, in order to be capable of interpretative innovation or enactment (cf. Daft & Weick, 1984; see Section 4.9.4), the emergence and functioning of communities of practice is a vital precondition for any organization or inter-organizational network.

6.9

BOUNDARY SPANNING AS PRAGMATIC VIEW ON KNOWLEDGE TRANSFER

Communities of practice and their understanding of learning show a pragmatic organizational learning, that is ‘learning-in-practice’. The next question is whether we can find a pragmatic view of knowledge management that joins the concept of legitimate peripheral participation.

Following Bourdieu (1977), Lave (1988) and Lave and Wenger (1991), Carlile (2002: 442) characterizes knowledge as “localized, embedded and invested in practice”, stating that knowledge creation and transfer take place in communities of practice. These communities often intersect organizational boundaries and even stretch out to individuals and groups outside the organization, i.e. networked communities of practice.

Organizational boundaries separate specialized subunits from each other and from external entities (cf. Katz & Kahn, 1966). Leifer and Delbecq (1978: 41) define a boundary as

22 Deetz and Kersten (1983) and Putnam (1983) call this phenomenon ‘closure’.

the demarcation line or region between one system and another, that protects the members of the system from extra-systemic influences and that regulates the flow of information, material, and people into or out of the system.

Organizational boundaries become manifest in communication boundaries. Boundary spanning refers to the activities that are undertaken to cross communication and, thus organizational, boundaries. These activities are essentially difficult and “prone to bias and distortion” (Tushman & Scanlan, 1981: 291), mainly because of the excessive specialization in organizations. The role of specialization regarding knowledge transfer can be described as follows: “Specialization and the existence of organizational boundaries are also associated with the evolution of local norms, values, and languages tailored to the requirements of the unit’s work” (Ibid., p. 290). These localized norms, values and languages hinder cross-boundary communication and interaction, and thus the transfer of knowledge.

One of the reasons is that the individuals involved in organizational specialization develop local understandings as a consequence of their differences in expertise and experience (cf. Jelinek & Schoonhoven, 1990). Tushman and Scanlan (Ibid.) continue by stating that “specialization is a double-edged sword, for it increases the efficiency of information processing within the unit, but simultaneously creates obstacles to information processing between the unit and external areas”. Organizations benefit from ongoing specialization, but simultaneously suffer from it because it hampers communication between organizational units and between communities and their environment. Functioning in (specialized) local communities leads to embeddedness of certain knowledge within localized contexts due to social and cognitive constraints (cf. Von Hippel, 1994; Nelson & Winter, 1982). As one can imagine, accessing and transferring this sticky, localized knowledge is not easy, to say the least. How we can understand and attempt to manage these processes of access and transfer, is discussed below.

6.9.1

PRAGMATIC KNOWLEDGE TRANSFER: THE ROLE OF BOUNDARY SPANNERS

My position here is that individuals are the key factor in knowledge transfer. This means that the role of the individual in knowledge creation and transfer is at the forefront. In support of this, we must first examine the relationship between knowing and knowledge. Knowing is invested in people, knowledge has a more external connotation because it is perceived as being transferable. We could argue that knowing is intrapersonal, and knowledge is interpersonal. People are capable of standardizing and recording their knowing in knowledge with the aim of transferring it to others. People who are involved in transferring knowledge from one entity (person, group, organization, network actor) to another will have to cross boundaries between these entities. Dougherty (1992) outlined how different thought-worlds hinder communication because “individuals use different meanings in their functional

setting” (Carlile, 2002: 444). This refers to the necessity of boundary work, even between individuals within one organizational unit or community. Bogenrieder (2003) emphasizes the intermediary function of boundary spanners by referring to them as linking pins. She (2003: 98) claims that “as the linking pin is a member of several groups, the linking pin could contribute to bringing in knowledge from another group”. They perform communicative activities between groups. Daft (1989) indicates that boundary spanning is performed by people and primarily concerns the exchange of information from an organization to its external environment. Leifer and Delbecq (1978: 40-41) identify boundary spanners as

people who operate at the periphery or boundary²³ of an organization, performing organizational relevant tasks, relating the organization with elements outside it.

Some scholars tend to restrict or focus the role of boundary spanners solely on their capability of crossing boundaries within organizational units or communities. But I argue that, if boundary spanners are capable of overcoming the confusion of tongues between individuals, they must be capable of overcoming boundaries between organizational or network boundaries as well – after all, in either case, it’s people that have to deal with each other. This suggests that boundary spanners are a strategic asset on any organization because they function as “exchange agents”(Leifer & Delbecq, 1978: 41) between the organization (or organizational unit) and its environment. Several scholars (e.g. Bolan, 1971; Fliegel & Kivlin, 1966) refer to boundary spanners as change agents who are involved in changing attitudes, perceptions, and the values of community members. Their strategic value becomes manifest in communities of practice.

In communities of practice, knowledge transfer and integration emerges spontaneously among community members and between communities and their environment. In many cases community members form cohesive, stable relationships with other communities, inside and outside the organization, thus enabling organizations to innovate (Brown & Duguid, 1991) and to maintain productive relations with their external environment. Communities of practice develop practices that can be looked upon as boundary spanning activities because knowledge creation, transfer and integration are by-products of conferring on and integrating new practices by community members.

Carlile (2002: 442) argues that “knowledge in organizations is problematic because knowledge is both a source of and a barrier to innovation”. The characteristics of knowledge that drive problem-solving (i.e. innovation) within a function actually hinder problem-solving

23 Notice the recurring importance of peripheries or boundaries (in this case in knowledge management) that was earlier detailed in theories of learning – Lave & Wenger’s legitimate peripheral participation – theories of governance – Frissen’s steering at the edges, and Beckers’ steering of mutual dependencies.

and knowledge creation across functions. It is at these knowledge boundaries that we find “the deep problems that specialized knowledge poses to organizations” (Carlile, 2002: 442). The irony is that these knowledge boundaries are not only a critical challenge, but also a perpetual necessity because much of what organizations produce has a foundation in the specialization of different kinds of knowledge.

Carlile (2002: 443) proposes the development of a pragmatic approach to knowledge creation and transfer across boundaries (of practice) that is “complementary to the syntactic and semantic approaches”. The syntactic approach presupposes that knowledge can be transferred across boundaries through the use of syntax, a shared and stable codified term or language that ensures accurate communication between sender and receiver (cf. Shannon & Weaver, 1949). This approach has been widely accepted by system theorists who argue that the problematic boundary between an organization and its environment can be solved by information processing. Through the existence of a shared and stable syntax across a boundary, matching occurs and ensures a quality information exchange (Lawrence & Lorsch, 1967: 33). The semantic approach recognizes that even if a common syntax or language is in place, interpretations often diverge and impede communication and collaboration. What people know and how they know it (cf. Dougherty, 1992) often diverges. This thwarts the possibilities for conveying meanings between individuals and communities.

The panacea for working with the semantic differences between individuals can be found in mutual understanding (cf. Nonaka, 1994). The generation of mutual understanding is facilitated “through communities of interaction where individuals can work through these differences by making tacit knowledge explicit across a boundary” (Carlile, 2002: 444). However, acknowledging differences and searching for ways to overcome them, by working through them collaboratively, is no solution for tackling all knowledge boundaries. This is why Carlile resorts to a pragmatic approach that is, of course, rooted in pragmatist traditions (cf. James, 1907). It elicits “the importance of understanding the consequences that exist between things that are different and dependent on each other” (Carlile, 2002: 445).

The pragmatic approach to knowledge transfer, by overcoming practice-based boundaries, is rooted in the theory of learning-in-practice (Orr, 1990; 1996; Brown & Duguid, 1991; Lave & Wenger, 1991). Based on Cook and Brown (1999), Carlile (2002: 445) argues that “knowledge and knowing cannot be separated from an individual’s engagement in the ‘practicing’ of their practice”. The situated and purposive nature of knowledge (cf. Carlile, 2002) must have consequences for processes of knowledge transfer across (practice based) boundaries. We must acknowledge that “knowledge is invested in practice” (Carlile, 2002: 446). This means that once knowledge has been proven effective, an individual is not likely to let go of that knowledge, in favor of knowledge that is developed by others, even if he/she is dependent on them. Carlile (Ibid.) thinks that individuals are reluctant to absorb new knowledge because “changing their knowledge means an individual will have to face the costs of altering what they do to develop new ways of dealing with the problems they face. Knowledge is

one of the means by which individuals demonstrate their competency in solving problems to others inside and outside their practice”. Thus, individuals will experience negative consequences by altering or abandoning their hard-won knowledge.

This follows Carlile’s interpretations of Bourdieu and Wacquant’s (1992) observations that “the knowledge that people accumulate and use is often at stake” (2002: 445). An additional difficulty is the increasing degree of specialization in and between organizations, indicated by Tushman and Scanlan (1978), which hampers working across practices. Translating and accommodating knowledge generated in one practice to the next, proves to be challenging in every organization or inter-organizational network. However, many complex societal problems exceed the problem-solving capacity of an individual or community because they emerge across organizational boundaries and individual practices. A pragmatic approach to boundaries presupposes that the conditions of difference, dependence and novelty are inevitable and omnipresent. The pragmatic approach recognizes the need to deal with the negative consequences that arise for individuals who have to trade their hard-won and personal(ized) knowledge for new, collaboratively conceived insights. The transformation of knowledge points to a localized and situated process of altering current knowledge by creating new knowledge and validating it within each function, and collectively across functions (cf. Carlile, 2002).

6.9.2

BOUNDARY SPANNING AS PROCESSES OF KNOWLEDGE TRANSFER

Tushman and Scanlan (1981) define boundary spanning as a two-step process, that is composed of obtaining information from outside units and disseminating this information to internal users. In their view, community members are capable of understanding the meaning of knowledge on either side of the community boundary. They select relevant knowledge on one side and convey it to the other side of the boundary. However, this view of knowledge transfer has an modernistic ring to it. It presupposes the capacity to overlook the collaborative processes of knowledge creation that evolve on either side of the boundary and to perceive knowledge transfer from one side to the other as a mechanical process.

In contrast, Carlile (2002: 451) identified “three characteristics of a tool, method, or object that made them useful in joint problem-solving at a given boundary”. I propose to apply these characteristics to organize and understand processes of knowledge transfer across (organizational) boundaries, using boundary objects. In doing so, knowledge transfer can be defined as a three-stage process that comprises 1) representation, 2) learning, and 3) transformation.

If we look at these characteristics from a procedural perspective, representation refers to the articulation of existing knowledge and the imagination of individuals involved in order to enter into the process of learning. Learning refers to the identification of differences and dependencies between existing individual and collective knowledge bases, in order to find

similar elements such as stepping stones, for the transformation of those knowledge bases. Transformation points to the process of refining existing knowledge bases across boundaries, and creating collaboratively conceived (new) knowledge.

I argue that this three-step process is appropriate for understanding and conceiving the pragmatic transfer of knowledge-in-use on either side of the boundary. In each unique situation, for each unique purpose, knowledge transfer begins with an articulation and comparison of knowledge-in-use by the actors involved, followed by the identification of differences of and dependencies on the existing knowledge bases. Next, based on this identification, the transformation of existing knowledge of the situation and purpose can begin. In addition, these processes appear to be consecutive: representation must be present before learning can take place. Both functions should be in place before transformation, when new collaborative knowledge replaces existing knowledge, can develop. I argue here that these processes will not be subsequent to each other, perhaps only on an analytical plane, but rather simultaneously. The reason for this argument lies in my assumption that experienced knowledgeable on either side of the boundary will be capable of (partially) seeing through and comprehending the consequences of transforming their knowledge-in-use: articulating and comparing knowledge is immediately followed by (indicative) insight into their differences and dependencies and by a provisional idea about what new knowledge is needed for bridging these differences and dependencies.

Several scholars, like Bechky (2003: 312), warn of a (too) simplified view of knowledge transfer by emphasizing that “the tacitness of much knowledge often makes codification, transfer, and subsequent replication of routines and standard operating procedures difficult”. In order to stay away from any modernistic connotation of knowledge transfer, Bechky also advocates speaking of knowledge transformation processes, noting that something happens with knowledge that crosses boundaries. Knowledge is reshaped and incorporated into practices of different communities. She outlined two preconditions for members involved in finding a successful approach to knowledge transformation between their communities. Such an approach must first invoke the differences in the work contexts and, second, create common ground between the communities involved. The first precondition refers to the second step in Carlile’s process of knowledge transfer, learning about differences and dependencies. The second precondition refers to specific characteristics of boundary objects that (should) facilitate the development of common ground.

Based on her ethnographic study, Bechky (2003: 326) concludes that certain boundary objects are not capable of creating common ground because they “do not invoke the necessary elements of work context”. Thus, at the boundaries of different types of communities, following different organizational contexts and characteristics, different types of boundary objects do apply. She advocates that boundary objects not only contain knowledge (based on e.g. Latour & Woolgar, 1979) but also “mobilize action in ways other than sharing

understanding” (based on e.g. Foucault, 1979). A certain context requires (a) certain boundary object(s) for communities to be able to relate to each other and find common ground for collaborative action (i.e. practice). Paraphrasing Beckhy, this means that the object must be capable of provoking collaborative practice by invoking the loci of practice and conceptualization of a problem (or challenge) that each group has. This will trigger an inescapable process of knowledge transformation.

For each specific context of a boundary spanning process between communities, some kind of tangible evidence will apply. Beckhy refers to March and Simon’s (1958) idea of “tangible evidence of a problem”. Also, earlier in this chapter, I referred to Dewey’s idea of a problematic situation that induces the process of inquiry, also called learning. Beckhy²⁴ states that “written and verbal explanations frequently failed to make meanings clear” (2003: 327). Speech and text are not enough and therefore Becky advocates deploying additional, tangible objects to transform knowledge across organizational boundaries. She found out that at some boundaries “more concrete means (i.e. objects) were necessary to ground knowledge in a different context” (Ibid., p.327). In this way, community members were able to enrich their own understanding of a problematic situation, and work from there to find a collaboratively conceived solution, that is a boundary spanning practice. This is invaluable for an organization and its constituting communities because it facilitates the desired knowledge transfer across organizational boundaries, thus enhancing the organization’s problem-solving capacity.

6.9.3

TANGIBLE KNOWLEDGE ACROSS ORGANIZATIONAL BOUNDARIES: BOUNDARY OBJECTS

Following the advocacy for pragmatic knowledge transfer, we can conclude that this is always attached to people. Knowledge is invested in people and their practice. People are capable of transferring knowledge through collaborative practice and interaction. However, to do so, people often resort to something tangible to refer to and confer on. These tangibles are often denominated as boundary objects. Star and Griesemer (1989: 393) define boundary objects as “tangible artefacts or object-like forms of communication that inhabit several intersecting social worlds and satisfy the information requirements of each of them”. We all have examples of these boundary objects in our own organizations. For example, work manuals, intranet and administrative forms usually try to cross boundaries, e.g. between management and workforce. As indicated, boundary objects have useful meaning only when they are implemented by people. People create boundary objects and put them in place and

24 In Beckhy’s study (2003), machines were the tangible objects that were used for sharing understanding between members of different (organizational) communities. These concrete manifestations of the problems proved to be meaningful to all the parties. Notice the resemblance with Orr’s study (1996) where talking about machines facilitated and mediated the knowledge sharing and transfer among repairmen.

use them. People define situations in which boundary objects are deployed, for example, by identifying and defining the contextual frame of the boundary.

Based on several scholars' work, we can recognize three dynamics through which boundary objects should be able to facilitate the knowledge transfer and integration between different types of knowledge – and practice – communities. First, they provide a shared language that can represent the domain-specific knowledge in a structure and format that are known on the other side of the knowledge boundary (Carlile, 2002). Second, they provide a concrete means for specifying and learning about differences and dependencies across a boundary, resulting in rich representations of the perspectives involved. Based on these representatives practitioners are encouraged to take on new perspectives (Boland & Tenkasi 1995; Carlile, 2002). Third, boundary objects provide a form of reification and transformation around which the practices of the various actors and co-constructions of an emergent, shared meaning can be coordinated (Carlile, 2002; Wenger, 1998). Through this we can postulate that, through the combination of boundary objects and boundary-spanning activities, knowledge integration and transfer across boundaries will gradually unfold (cf. Wenger, 1998).

Carlile (2002: 451-452) identifies three steps in the process of making boundary objects useful for knowledge transfer activities, developed in joint problem-solving across boundaries and practices. First, “a boundary object establishes a shared syntax or language for individuals to represent their knowledge”. A common syntax is vital for dealing with a knowledge boundary. Individuals on either side of the boundary must see some common ground (or repository) that represents their practice-based knowledge. Second, “an effective object at a semantic boundary provides a concrete means for individuals to specify and learn about their differences and dependencies across a given boundary”. In contrast to the previous characteristic, here boundary objects must specify the difference(s) between the (individual) knowledge bases across a given boundary. Also, the boundary objects must identify the dependencies of the individuals in achieving joint problem resolution. Hence, there must be reasons for knowledge transfer across a boundary: “If this specifying and learning of differences and dependencies has taken place, we are often left with negative consequences that must be resolved”. Third, “at a pragmatic boundary, an effective boundary object facilitates a process where individuals can jointly transform their knowledge”. This transformation process is aimed at resolving the negative consequences through “altering, negotiating or changing the object or representation used”. The rationale behind this process is that if the individuals are not capable of transforming their current practice to a cross-functional problem, their (individual) knowledge will have little meaning for problem-solving. Or as Carlile (Ibid., p. 452) states: “Individuals must be able to draw on, alter, or manipulate the content of a boundary object to apply what they know and transform the current knowledge used at the boundary”. His advocacy for a pragmatic knowledge transfer refers to three

separate, but highly intertwined, categories in boundary spanning activities: people, objects and processes.

6.9.4

BOUNDARY SPANNERS IN NETWORKED POLICY ENVIRONMENTS

Williams (2002) addresses the role of boundary spanners in inter-organizational frameworks of intervention that are developed around the perceived need for resolving complex societal problems. These frameworks, strategic alliances, public-private partnerships and other collaborative arrangements, more or less convert to today's hybridized and networked knowledge landscape (see Sections 4.8 and 4.9). Williams (*Ibid.*, p. 103) draws attention to "the pivotal role of individual actors in the management of inter-organizational relationships", by focusing on "the skills, competences and behavior of boundary spanners". In doing so, he identifies six capacities of these individuals who attempt to cross boundaries in a networked policy landscape: 1) reticulist skills, 2) entrepreneurial and innovative skills, 3) relational and interpersonal skills, 4) trust building, 5) personality traits, and 6) styles of leadership. For the purpose of this thesis – the practice of (a group of) individual policy professionals in innovation processes – only the first three capacities concern us.

Williams advocates that boundary spanners be skilled to work in and with the network(ed) environment of the policy landscape they are engaged in. Hosking and Morley (1991: 228) think that networking entails "gaining information, achieving influence to help implement the actor's agenda and to exchange with others cooperation and resources". Boundary spanners must be capable of "understanding the social construction of other actors, and how they define the issue in relation to their own values and interests, knows what outcomes and processes each would value, knows who needs to be involved, know who could mobilize influence and so on" (*Ibid.*). This has close reference to Gasson's (2002: 5-6) ideas on "the different ways of knowing in distributed collaboration: know-what, know-why, know-how and who-knows-what".

Based on the work of Williams (2002), Webb (1991), Degeling (1995) and Friend et al. (1974), I argue that the reticulist capacities of boundary spanners refer to their political skills and competences regarding connectivity. These skills or competences strongly refer to the concept of network management and its inducement for (learning to) establishing connections. The reticulist qualities revert to the next two capacities of boundary spanners. The entrepreneurial and innovative capacities of boundary spanners are perhaps best captured by Leadbeater and Goss (1998: 15) who refer to these practitioners as "creative, lateral thinking rule-breakers who frequently combine a capacity for visionary thinking with an appetite for opportunism". The political skills of boundary spanners in the policy landscape are accurately described by DeLeon (1996: 508) who refers to "catalysts who bring together problems and solutions that otherwise would bubble chaotically in the conventional currents of modern policy streams". Lastly, Williams (2002: 110) refers to the boundary spanners' capacities

of “opening policy windows” (cf. Kingdon, 1984), in the sense that they can be recognized as policy entrepreneurs.

The relational and interpersonal capacities of boundary spanners elicit “their ability to engage with others and deploy effective relational and interpersonal competences” (Williams, 2002: 110). Boundary spanners acknowledge the need to gain an understanding of people and organizations outside their own community. Trevillion (1991) regards boundary spanners as “cultural brokers” who are capable of understanding, empathizing and respecting other values, beliefs and perspectives. In turn, boundary spanners must be capable of managing the reciprocity between them and the others they are working with. They must be aware of the danger of becoming too involved in another’s dilemmas and problems. Williams (Ibid., p. 111) describes this as “a balancing act between inclusion and separation, dependence and autonomy”.

6.9.5

AN INTEGRATIVE APPROACH TO KNOWLEDGE TRANSFER REFERS TO SENSE-MAKING

Following Carlile’s theory of the pragmatic use of boundary objects in knowledge transfer and Bechky’s observation that certain objects are capable of triggering knowledge transformation in certain inter-community boundaries, I argue that the three dimensions of boundary spanning activities – people, objects, and processes – can only be differentiated at an analytical level. People are the interlinking concept; only they are capable of identifying the need for knowledge transformation through tangible evidence of a problem; only they are capable of jointly exploring the designated boundary object(s) that helps to share understandings and find common ground. This means that the three perspectives will be developed and deployed in a synchronized fashion, making the process of knowledge transformation unique to every combination of community in which it emerges.

Knowledge transformation in which boundary spanners are repeatedly involved, using jointly constructed boundary objects, functions as ‘collective memory’ for the sense-making endeavor. Here, the ‘balancing act’ becomes manifest: each community member engaged in cross-boundary practice has to synchronize the ongoing development of practice-based knowledge within his/her community with the demands and dynamics of cross-boundary work. In turn, each interaction between boundary spanners, whether successful or not, adds to the collective memory of the cross-boundary community. The knowledge ‘recorded’ in this collective memory has to be synchronized, or made useful, to the knowledge of the constituting communities. This makes it difficult for newcomers to become members of cross-boundary communities of practice.

With the notion of non-canonical practices and their subsequent communities in mind, we could argue that learning-in-practice entails sense-making. Workers engage in a process of

finding out what is going on, and how to deal with it. Gasson (2005: 2) has directed us to the sense-making capacity of knowledge transfer, accurately indicating that we must be “engaged in that detached sense-making and analysis, by which situated knowledge is externalized, reified and made explicit”. This challenge is relevant for resolving problems that exceed the capacity of one community. On such occasions, community-based knowledge must to be transferred because community members have to work across community boundaries. For this, knowledge has to be externalized and made explicit, e.g. with boundary objects. A community member who is engaged in creating and sharing new knowledge is often not aware of the fact that this could have meaning beyond the boundaries of his/her community. At the same time, this community member must be capable of transforming that knowledge into something members of other communities are able to relate to, thus spanning boundaries across practices and communities.

Based on Weick’s work (1995), Gasson (2005: 3) argues that the knowledge transfer process requires “joint sense-making, that is, a mutually-negotiated understanding of how to make sense of the local, organizational world of work and interaction”. Thus, knowledge transformation processes across community boundaries are largely about joint sense-making. Sense-making is an operationalization of the pragmatic approach to knowledge transfer which, in my view, would entail the three constituent categories: people, objects and processes. Based on the ideas of Weick et al. (2005) and Taylor and Van Every (2000) I think that sense-making presupposes the integrated involvement of boundary spanners, boundary objects and boundary processes because of the following observations. First, I propose that sense-making is human activity performed by boundary spanners who, retrospectively, explicate, confer and transform knowledge, in an attempt to rationalize what they are doing. Second, I argue that in doing so, these sense-makers make effective use of self-created images, that become manifest in what may be called boundary objects, such as written and spoken texts, but also visuals, graphics and other artefacts. Third, I perceive sense-making as inducement for processes of interaction, resulting in (communal) practices for problem resolution. In addition, these problem-solving practices are guided by the institutional characteristics that have been translated into the boundary objects in use (cf. Gioia et al., 1994).

6.10

CLOSING REMARKS AND AN INTRODUCTION TO CHAPTER 7

I have argued in this chapter that the impacts of reflection on the practice of innovation practice and the processes of knowledge transfer can be subsequently understood through the concepts of learning-in-practice and boundary spanning. These concepts function as

theoretical lenses for reflecting on the impacts of reflection that the intended learning course will provide.

In Chapter 7 the case study of this thesis is presented. As introduced in Sections 1.6.5 and 1.8 the professionals involved in conceiving of and organizing public policy innovation within the context of the DG RWS's WINN program, themselves had raised the need for reflection on their evolving practices and knowledge transfer. This reflection should be embedded in the innovation program through what they referred to as 'a learning course'. The next chapter describes the attempt that was made to organize and facilitate a two and a half year learning course for this purpose. The impacts of this reflection were evaluated in this period of time. The evaluation connects to the first component of the central research question of this study, namely an identification and description of the impacts of embedded reflection on the practice of innovation and knowledge transfer in this specific community of practitioners.

In Chapter 8 the described impacts of reflection are reflected upon through the concepts of learning-in-practice and boundary spanning that were presented and discussed in this chapter.

Chapter 7

The Learning Course for the WaterINNOvation Program of the Dutch ministry of Public Works, Transport and Water Management

7.1

INTRODUCTION

The case study described is the learning course that was organized for the WINN program. WINN is an innovation program of the DG RWS. This innovation program was initiated to stimulate, organize and implement larger, pioneering innovation in water management. The introduction to this study (in Chapter 1) includes the description of the organizational context of the learning course and the assessment of its need. The case study of the learning course elaborates on that introduction. Back in Section 1.6.5, the perceived need for learning in the WINN program was described, as well as its objectives. To summarize, the learning course in the WINN program seeks to reflect on innovation practice as well as on the processes of knowledge transfer.

In this chapter, a thick description¹ of the learning course is presented. This thick description is based on a longitudinal evaluation that took place between 2004 and 2006. An assessment of the need for a learning course in the WINN program was carried out through an *ex ante* evaluation in 2004. The assessment of the impacts of the learning course is described through two *ex durante* evaluations (in 2005 and 2006) and an *ex post* evaluation (in 2006). In Section 7.3, the initial operationalization of the intended learning course is described. Next, the methodological approach to the learning course is explained in Section 7.3. The design

1 See Brown & Duguid's appreciation (1991) of Orr's ethnographic PhD study (1990), 'Talking about Machines'. The idea of a thick description originates from Gilbert Ryle.

and preparation of the learning course, based on the *ex ante* evaluation in 2004, is described in Section 7.6. The implementation of the course in 2005 and 2006 is described in Section 7.7. The impacts of that course are discussed in Section 7.8, based on the *ex durante* evaluations of 2005 and 2006, and the *ex post* evaluation in 2006. In Section 7.9 an overview is provided on the impacts of the learning course on knowledge transfer in the WINN program. This chapter concludes with some closing remarks and a brief preview of Chapter 8.

7.2

OPERATIONALIZING THE LEARNING COURSE

Providing support for both individuals and professionals in the program during the execution of the innovation tasks presupposes a group-oriented and real time organization of the learning course. The key principle is experience-based learning which is operationalized by defining the topics for reflection. The working methods for reflection were suggested by the professionals themselves. Both areas for reflection (topics and working methods) must help them to reflect on their experiences in practicing innovation. Furthermore, the provided learning course should be an experience in itself that inspires the professionals to advance their existing innovation practice. In turn, new knowledge and experiences acquired by the WINN professionals through the learning course may be a source of inspiration for other professionals at the DG RWS. The WINN professionals are assigned to the task of stimulating innovations in water management. They are developing specific practices in fulfilling their tasks. It is my proposition that the learning course will be most effective when it is designed to support the evolving practices within WINN. Therefore, learning was aimed at empowering the WINN professionals to pursue their objectives and execute their tasks. It was my conviction that next to supporting knowledge transfer, this approach would also be capable of supporting the progress of the innovation program as a whole. When the learning course started, the innovation program had been up and running for less than a year. The themes and the pilot projects, as well as the governance of the program, were not fully mature yet. The professionals involved at WINN still had to get to know each other; functional roles had not fully materialized; the objectives of the program, as well as its relation to other organizational parts of the DG RWS, were still under construction.

7.2.1

DEFINING THE SPECIFICATIONS FOR THE LEARNING COURSE: EX ANTE EVALUATION (FALL 2004)

For the purpose of designing a dedicated learning course to operationalize the need for reflection on the practice on public policy innovation in the WINN program, an *ex ante* evaluation was executed to define the course. The *ex ante* evaluation was carried out in the

fall of 2004 by in-depth interviews with the WINN professionals. The interviews covered the functional roles that develop actual innovation practices in WINN, in other words program management, program support, theme leaders, and some pilot-project managers. In the pragmatic, action science based perspective, it is common sense to let the participants themselves define what their needs for reflection and learning are instead of having others define it for them. Consequently, the WINN program Board and the DG RWS' top-level management were not included in these interviews because it was clear that they would not participate in the learning course. Additional information for this case study was obtained from document analysis and progress discussions with WINN's core team members. The *ex ante* evaluation served as a starting point² for the learning course. The *ex ante* evaluation attempted to identify two components for designing the learning course 'Forum Ervarum':

1. Topics for reflection that represent the need for reflection and learning by the professionals involved (Sections 7.3.2 and 7.3.3). The topics were suggested by the professionals themselves.
2. Working methods with which reflection on these topics can be operationalized (Section 7.3.5) and were suggested by the professionals themselves.

7.2.2

DESIGNING THE LEARNING COURSE: TOPICS FOR REFLECTION

The first component of the learning course Forum Ervarum was the topics for reflection that would have to be addressed. The information gathered about the need for learning can be divided into the following eight topics:

- a) (Re-)interpretation of the concept of innovation;
- b) Working from the outside to the inside: external orientation of the WINN professionals;
- c) Role division and role perception of the professionals;
- d) Organizational focus of the program;
- e) The impact of WINN on the DG RWS and on the world outside;
- f) Tension between substantive innovation and procedural innovation;
- g) Tension between normal policy-making and innovation work;
- h) Personal skills and competences.

Topic "h", personal skills and competences, runs through all reflective topics. All of the topics are related to the personal competences of those active within WINN. Because of the importance of these topics, it will be the principal element of the approach to the learning course in 2005 and is instrumental for the choice of working methods (see Section 7.5.6).

2 In Dutch: nulmeting.

7.2.3

EXPLAINING THE TOPICS FOR REFLECTION

An important challenge for the learning course was to develop an understanding of these topics and the underlying dilemmas. Thus, an important objective for Forum Ervarum was to develop an understanding of the internal and external challenges WINN must face and resolve to achieve the desired innovations. The development of this joint understanding as a basis for action can be perceived as learning. Learning to understand and unravel the topics and their underlying dilemmas in close interaction with the colleagues with whom one has to work in the innovation program is helpful for developing one's own innovation practice, and perhaps even a joint practice. Trying to jointly interpret and re-interpret the objectives of the innovation program, the environment of the program, their tasks and the subsequent roles and role division among them, can be perceived as the principle challenge for Forum Ervarum in 2005.

a. (Re-)Interpretation of the concept of innovation

There were different views of the concept of innovation among the group of WINN professionals. These differences concerned the definition and scope of innovation and the (scientific) disciplinary from which innovation is approached. Their views on innovation varied from combining current technologies and knowledge into new ones, by applying current technologies and knowledge to new situations, to process-oriented innovation. Next to this, it is clear that WINN was largely concerned with complex multi-disciplinary needs for innovation that are still often unilaterally and mono-disciplinary conceived. To assess this topic for reflection, I began the in-depth interviews with the question: "What comes to mind with regard to the conception of innovation?" The comments mentioned below give an impression of what types of questions or dilemmas the WINN professionals had with regard to this issue:

How are WINN innovations coordinated with other innovation programs³ of DG RWS?

How can multi- and trans-disciplinary innovations be stimulated instead of the present mono-disciplinary innovations?

How can present innovation needs be reframed from different disciplines?

How can integrated innovations instead of sectoral innovations be stimulated? How can system innovation in water management be stimulated by the WINN program?

How should we deal with innovations that transcend the domains of the Ministries?

3 Innovation programs such as Roads to the Future (WnT), O&I programs, Stuurboord, etc.

b. Necessity to work more from the outside to the inside

WINN's main objective was to initiate a change from supply-oriented work to demand-oriented innovation (see Section 7.3). Instead of offering new technologies invented from scratch, the actual need for innovation in water management should be pro-actively revealed and assessed. This means that, if possible, innovation must be developed in close cooperation with other problem owners (such as water boards, municipalities, branch organizations and the DG RWS' regional agencies), and executed in cooperation with these actors, as well as research institutes and private sector firms. This outward orientation must evolve at the specialist agencies as well as at the regional agencies. In general, the DG RWS as a whole wants better relations with the world outside. The WINN professionals seemed to define the outside world as all actors outside the DG RWS, such as private sector firms, general public, interest groups and other (water managing) governments. As indicated in Section 1.6.5, the DG RWS's working style, well-known as 'inside to the outside' must now evolve into an 'outside to the inside' practice. This necessity developed into the following questions:

How should a wide-range articulation of the societal need for innovation be organized?

How should ideas from 'outside the DG RWS' be translated into innovative pilot projects?

How should external contributions to the development of the WINN themes be organized?

How should both scientific and experience-based knowledge from the outside be adequately introduced to the inside, i.e. the innovation program?

What roles do external communications and process management play in the development of the WINN program and its innovation themes and pilot projects?

c. Role division and role perception

In Section 1.6.3, the functional roles in the WINN program were described. The role division within WINN was not clear at the time of the *ex ante* evaluation. There was an idealistic idea about the way innovation practice in WINN should be formally organized. However, the interviews indicate that there was no joint view about the best way to organize the functional roles and the role division in the program. In addition, within a functional role, different tasks had to be carried out at the same time, for example analyzing, networking, creating, organizing, taking responsibility and monitoring. The lack of clarity in role division was expressed by the professionals in the in-depth interviews through the following questions:

What is an efficient and effective way of cooperating with each other within the program, both formal (e.g. meetings of WINN's core team) and informal?

What will change the functional roles and corresponding tasks in the progress and development of the program?

How should we as innovation professionals deal with these changes?

What is the role division between theme leaders and pilot-project managers? What are the formal responsibilities of the theme leader in relation to the pilot project manager?

How can a productive role division between program management, program board and DG RWS' top-level management be developed and ensured?

Furthermore, the role perception of the functional roles was not the same. The perception of each other's roles diverged and didn't appear to have been discussed among participants at the start of the program. As a consequence, WINN professionals expressed different perceptions about each other's functional roles. And more remarkably, it appeared that professionals with the same functional role thought differently about what their tasks were and/or how these tasks should be carried out. It also appeared that role perceptions were subject to change depending upon the actual stage of the program, theme or pilot project. For example, the initial stage concerned conceptualizing the content of the program, theme or pilot project, where roles like knowledge development and team motivation are important. But the implementation stage was more about process management which is externally oriented, and procedure management which is more internally directed. Subsequently, tasks like communication, monitoring, and reporting took up much of the work. It remained to be seen whether the professionals were capable of making the role switch. The confusion about roles and tasks is illustrated by the following questions asked by the professionals interviewed:

What are the expectations of the professionals involved regarding the execution of the functional roles? What role perceptions do program management, program support and theme leaders see for themselves?

How should an efficient and effective relationship between professionals in their functional roles be organized?

How should a pilot-project team be organized and who is responsible for doing that?

How do you go about the different tasks within your functional role?

How should be dealt with the changes in one's functional role, for example from team building and knowledge creation to coaching and taking responsibility?

d. Organizational focus of the WINN program

The list of remarks regarding the program's unclear organizational focus can be divided into the development of the program as a whole and the development of the WINN themes. The concern about the organizational focus of the program was mainly caused by the fact that WINN was preceded by the somewhat fragmented and chaotic innovation program 'Turning Tide'⁴. This program had a more or less 'accidental' nature, characterized by an approach of just-get-it-started without a grounded conceptual framework. In contrast, WINN had to be steered away from such an approach, towards a structured and focused innovation program. Next to the lack of organizational focus, it was not clear what the governing or evaluative framework⁵ for developing the program should be. There was no clear concept for steering both program, themes and pilot projects, that acknowledged the fact that they could well be in different stages. This made the creation of a good mix of short-term and long-term innovations difficult. Moreover, the structuring of the chaotic stream of innovative ideas produced in this program, was perceived to be impossible without a governing and evaluative framework. This left the question of how to substantiate and (*ex ante*) evaluate new ideas for innovative pilot projects open to continuous discussion. It was perceived that without a governing framework and subsequent criteria, the selection of new pilot projects would deteriorate into a random process, and that was perceived to be undesirable, based on previous experiences, such as with the preceding innovation program, Turning Tide. The absence of a governing and evaluative framework tended to increase the confusion about who should do what within the program (see role perception and division). It was not clear who was responsible for developing this framework: the program manager, the theme leaders or both of them as WINN's core team. Concerns about the development of separate WINN themes and the accompanying portfolio of pilot projects can be seen through the following questions expressed in the interviews:

How can a workable theme plan be made based on an assessment of current societal needs within the specific theme?

How should the development of a theme be organized, both internally with the pilot managers as well as externally, involving society?

How can the substantive development of a theme be organized and monitored?

How can the themes be meaningfully and substantively differentiated from each other?

4 in Dutch: Kerend Tij.

5 in Dutch: afwegingskader.

How should new innovative ideas be developed and translated into pilots, in a more structured way?

Evaluation of the progress of the WINN themes primarily took place based on progress reports and discussions with program management about the financial and administrative accountability and substantive milestones. The question, however, is if this type of reflection provided enough information to steer the pilot projects accurately. Or, should reflection on matters such as the progress of the pilot projects and the development of personal competences of the WINN professionals be considered as well. In addition, the question of how to monitor and steer the progress of the pilots in the desired direction cannot be answered easily. Can pilot-project managers initiate self-governing and self-evaluating mechanisms for their pilot project(s)?

e. The impact of WINN on the DG RWS and the world outside

WINN program's objective was to achieve different objectives at the same time. This concerns the program's three-phase goals as follows:

1. Achieve innovative themes and pilot projects in water management that are initiated and organized by the WINN program itself,
2. Actively reform the innovation culture within the DG RWS through implementation of the WINN program, and
3. Stimulate innovation in Dutch water management (e.g. at private sector firms and knowledge institutions) through the DG RWS' innovation program.

These diverging ambitions had to be achieved in a change process in which the DG RWS transformed itself into a professional client organization⁶ (e.g. through professional contracting out agreements with private sector firms, see Section 1.4.1). This required improvement of the financial-legal structures, more accurate articulation of the societal needs for innovation in water management, and effective means for involving private sector firms on a more structured basis. These ambitions had to be achieved by setting concrete goals for the program. Perceptions of the program's ambitions appeared to vary: from creating new policies through new technical expertise to supporting the existing policy. This was elaborated on by the questions posed by the interviewed professionals during the *ex ante* evaluation:

What are the views of those involved with regard to the WINN program's ambitions and targets?

6 In Dutch: professional opdrachtgever.

What are the views of those involved concerning the relationship between the outcomes of the WINN program and the tasks and responsibilities of the DG RWS in the future?

How should we tackle the tension between short-term action and long-term thinking, a tension that tends to be a regular phenomenon at the DG RWS?

How should the implementation of content-oriented and procedural innovations in the DG RWS as a whole, best be organized?

How are so-called runways⁷ for developing innovations within the DG RWS organized and by whom? What is the adequate role division between the specialist and the regional agencies with regard to this? What could be potential 'assessment criteria' for identifying favorable conditions?

f. Tension between substantive and procedural innovation

There is a strong tendency at the DG RWS to steer towards substantive innovations, seen in concrete, tangible and visible projects and products, such as alternative water management technologies and/or water managing infrastructure. In addition, innovation that concerns giving new meaning to water management in a changing societal context is not commonly perceived as innovation at the DG RWS. But in some situations it appeared that society's need for procedural or communicative innovation was much greater than the need for new 'hard' technologies. For some societal needs for improved water management, it was more important to negotiate what the objective of innovation should be, or through what type of process this innovation would be achieved than implementing a new technology. However, the problem with procedural innovations, for example a public-private partnership with one (or more) private sector firm or knowledge institute, is that they are a lot less tangible, visible and measurable than substantive innovations. And that means that appreciation for this type of innovation was limited within the organizational culture of the DG RWS (see also Section 7.4). The WINN professionals formulated questions such as:

How should we deal with 'soft' objectives such as creating awareness, the registration of experiences and emotions and, for example, with thinking differently about dealing with societal issues that have an impact on water management?

7 In Dutch: landingsplaatsen. These runways are favorable conditions/situations/locations in which developing innovations (technologies, concepts) can be tested by implementation in the actual practice of water management. The specialist agencies are mostly concerned with conceiving of and developing innovations, the regional agencies are responsible for executing tasks in regional water management and are, ideally, suited for testing and implementing innovative technologies and concepts in that domain.

How should the necessity of procedural innovations be represented?

How should the exchange of knowledge about substantive and procedural innovation be stimulated?

How should be dealt with the tension between the substantive quality (from a technological perspective) of innovation and the social needs support for certain innovations?

Substantive, technological knowledge for improving water management is generally available or can easily be made accessible at the DG RWS or its partners. However, there is a perceived lack of expertise and experience in areas of finance and economics, in legal administrative concepts, management tools and in process management and communication. This expertise is necessary to coordinate the interests that represent possible solutions and to gain support for innovative concepts or technologies.

g. Tension between routine policy work and innovation work

In order for the WINN program to work, the theme leaders' and pilot-project managers' skills must balance the search for uncertainties – i.e. innovation – with the provision of the desired security by working according to standard procedures. Supposedly, the reliability and trustworthiness of the program could be enhanced by a systematic style of working. However, strict project planning might develop a tension with the practice of innovation where spontaneity, chance and creativity are perceived to be vital. For some WINN professionals, a systematic style of working is the guiding principle for recognizing favorable ideas, but for others it means a restriction of freedom and of creativity, which literally stands in the way of innovation. This dilemma was expressed by the professionals through the following questions:

How should innovative work styles be incorporated into the DG RWS' annual cycle for policy planning, reporting and accounting?

How we handle the tension between spontaneity, creativity and emotion in innovative work and the restrictions that result from the formal administrative procedures?

How can external innovative ideas, e.g. from private sector firms, be adapted in the formalized tender procedures that are applied to innovation projects?

Should a more systematic working style within the program as a whole and particularly in themes, be stimulated or will this destroy its innovative capacity?

How can the internal support at the DG RWS for the 'craggy' innovation processes in WINN be strengthened?

WINN innovations often appeared to be challenging standard policy guidelines and/or the political instructions at that time. Some of the professionals stipulated that WINN must oppose the existing, standard policies with regard to water management whereas others thought this would be counterproductive to conceive and organize innovation. This tension can lead to a dual role problem⁸ for the professionals because they have a stake in WINN, as well as in the formal policy or research department at one of the DG RWS's specialist agencies. In addition, these professionals sometimes work at the same time in a client role (in innovation projects) and at an executive role (in their regular job). To be able to deal with the tension between innovation and normal policy work, seemed to require specific competences from the professionals, as is illustrated by the following questions:

How should we deal with the tension between dealing with innovation and formal policy guidelines?

Can the formal policy department be used by the WINN-professionals as a source for customized innovation, and if so, how?

How should we deal with the tension between standard procedures and innovative work?

How do other innovative organizations in the private sector deal with this tension?

h. Personal competences

As stated in Section 7.2.2 the topic for reflection regarding personal knowledge, skills and competences recurs in all of the other topics. Tasks carried out in each functional role within the WINN program corresponded to a certain set of knowledge and competences. At present, different tasks and functional roles are being executed as one-man-activities. It is, however, difficult to bring all the necessary competences of a functional role down to one single person. Sometimes, the individual professional carrying out these tasks lacks some of the necessary expertise, skills and competences. This leads to dilemmas with regard to acquiring the appropriate competences to carry out the tasks and for organizing the necessary expertise and skills.

7.2.4

ASSESSMENT OF THE TOPICS FOR REFLECTION

An overview of the topics for reflection indicates that the WINN professionals emphasized the importance of learning something about several perspectives on conceiving of and organizing innovation and knowledge transfer. The question of how to organize innovation by

8 In Dutch: dubbele petten problematiek.

incorporating internal and external interests in an innovation task (within a theme or pilot project) is put forward as an important objective for the intended learning course. The topics for reflection that address role perception and division between WINN professionals, as well as the organizational focus of the WINN program and its innovation themes, indicate that the professionals had existential and teleological questions about the purpose and orientation of the program and its thematic components and pilot projects.

WINN was started in 2003, and the *ex ante* evaluation on behalf of the learning course was executed in the fall of 2004, indicating that there was confusion about where to go with WINN. The question of how to understand and define the concept of innovation (e.g. in relation to 'normal policy work') is also one of the focal points. Or, as some of the professionals sighed in the interviews:

How should the innovation assignment for WINN be conceptualized and focused? Now, we are continuously looking for something to hold on to.

All together, the topics for reflection expressed by the professionals in the *ex ante* evaluation, seemed to refer to context-oriented, organizational and existentialist issues, rather than substantive⁹ ones. Learning about innovation as a concept and reflecting on how to organize water management innovation in the institutional context of the DG RWS and in the Dutch water management field as a whole, tended to be the central objective of the learning course, at least in the year 2005. I perceive this as remarkable because the professionals were supposed to be substance-driven people who might not get enough of learning about and reflecting on substance (see Section 1.6.5). In hindsight, I argue that they might have considered themselves to be knowledgeable experts on substantive themes and pilot projects, or at least know how to acquire or access this knowledge. The professionals put themselves (as innovators) and the knowledge transfer processes at the heart of the learning course, and not the substantive questions about innovations in water management. They did not cite any substantive needs for knowledge about the newest technologies, but raised questions that referred to a need for knowledge about "how can I be(*come*) capable of conceiving of and organizing *public policy* innovation in water management?"

What does this mean in light of the central objective of the learning course? It is clear that the learning course should address these contextual, organizational and existential topics for reflection that they raised in the *ex ante* evaluation interviews. For them, being a professional innovator requires more than thorough substantive knowledge about the latest

9 The professionals did not refer to needs about learning what the newest reinforcement techniques for dams and levees were, or the latest technologies for coastal defense, or techniques for removing and reusing river sediments. These learning needs were already – or expected to be – met in the implementation of the pilot projects and, therefore, evidently didn't need mentioning in the evaluatory interviews.

construction techniques for water infrastructure or the top-of-the-line simulation models for calibrating river flows. It requires the capacity to organize interests, knowledge bases and resources around these questions, and be visible in an evolving practice of conceiving of and organizing innovation in the context of the DG RWS, and in guiding the processes of knowledge transfer. In this sense, the professionals echoed the ‘private sector, unless...’ directive that was issued in the DG RWS’ Business Plan 2004-2008. They tried to anticipate how act like a professional client for private sector firms and knowledge institutes, and, somewhat less articulated in the topics for reflection, how to implement a client-oriented working style for the general public.

The consequences of this *ex ante* assessment of the topics for reflection will become visible throughout the further description and analysis of the case study (in Chapter 8).

7.2.5

DESIGNING THE LEARNING COURSE: WORKING METHODS FOR REFLECTION

The second component of the learning course was the working methods for reflection with which the aforementioned topics were to be addressed. Based on the information obtained from document analysis, in-depth interviews and progress discussions with WINN’s core team members, a preliminary impression of the learning course Forum Ervarum came to mind. The basic principle lay in experience-based learning. Experience-based learning is supported and stimulated by choosing activities to reflect on actual experiences had by the WINN professionals¹⁰ (see also Section 7.6). An important precondition for the methods is that they contribute to the “creation of communities of inquiry in communities of social practice” (Argyris et al., 1985: 34). This means that, with aid of the methods for reflection, I, as embedded researcher, must be capable of “working with a community to create conditions in which members can engage in public reflection [or as I would prefer, shared reflection] on substantive matters of concern to them and also on the rules and norms of inquiry they customarily enact” (Ibid., p 34).

In the previous section, the substantive matters of concern were described sufficiently. The working methods must be capable of addressing them in a meaningful and reflection-oriented manner. Next, these methods should address the ways in which the knowledge behind the practical challenges of conceiving of and organizing water management innovation is generated and applied. This means that reflection in the learning course must also be focused on the “practitioners’ preferences for valid information and consistency for public testing and potential disconfirmation of knowledge claims” (Ibid.), by looking at the knowledge-based assumptions they use to ground their practice.

10 Based on Chapter 6 of this thesis, I presume that learning from a relativist/pragmatist perspective is essentially composed of four activities: experiencing, reflecting, interpreting and acting. These activities take place simultaneously and not subsequently. This presumption was key in designing WINN’s learning course.

Reflection on both substantive matters of concern and the rules and norms of inquiry must be appropriate to inform action. Based on the provided reflections, the professionals should be enabled (or inclined) to alter, modify or readjust their practice and knowledge transfer. Thus, the working methods with which reflection is provided must be capable of identifying and harvesting possibilities and opportunities to change the existing practice and knowledge transfer in WINN.

The WINN professionals expressed their need for a method that could support them in an efficient and effective way to learn from each other in the WINN program. In addition, they indicated that they wanted to learn from innovators and innovations in other (policy) domains. Lastly, learning from failure (i.e. unsuccessful pilot projects, both inside and outside the policy domain of the DG RWS) could be an approach to identify the do's and don't's in organizing innovation (what went wrong, how was this tackled?).

After the *ex ante* interviews, two experimental master classes were organized to test whether this would be a suitable working method for experience-based learning (for argumentation on the premises, see Section 7.5). It was expected that the master classes would facilitate the knowledge transfer by knowledgeable, experienced experts to the professionals in the WINN program. Furthermore, the master classes were expected to accommodate knowledge translation from external sources to internal application. It was expected that the master classes would provide an inspiring and constructive method for gaining alternative knowledge from external sources (i.e. knowledgeable and experienced persons from outside WINN), and for discussing the value of the gained knowledge for the progress of the innovation program. Lastly, the master classes had to support reflection on the ways that the professionals generated and applied information for their innovation practice and knowledge transfer.

According to the participating WINN professionals, the experimental master classes were appropriate for providing reflection on their experiences with the program thus far. This was achieved by contrasting their practice with the experiences of external experts who had been working in other innovation programs or change processes. Through in-depth discussions with the external experts, WINN professionals were able to sharpen their thoughts on how to (re-)organize the state of affairs in their own innovation program. The reflective impact of the two experimental master classes was indicated by the questions and deliberations in their discussions with the 'master'. Each of the professionals continuously assessed the value of the lessons of the master for their own innovation practice. Based on their discussions with the master, they then entered into reflective discussions with each other, elaborating on the external experiences with their own experiences as reference.

According to the WINN professionals the early master classes proved to be an experience in themselves. The professionals acknowledged that the experiences of knowledgeable professionals who have dealt successfully with one (or more) of the selected topics for reflection

were a recognizable and inspiring source of knowledge. However, they felt that these master classes did not fully cover their need for enhanced personal competences. This was because the master classes proved ineffective for addressing the strengths and weaknesses of each WINN professional's personal professional performance. The people who inhabit WINN show personal strengths and weaknesses in performing their role as innovators that must be either sustained or improved. The result of this was an additional method, called reflective sessions, that was introduced to the learning course's design.

The reflective sessions should support the sharing of and reflection on the professionals' personal experiences with regard to the tasks they have in the program. The reflective sessions were organized for smaller subgroups of these professionals. In a more closed and safer environment, they were invited to reflect on specific, sensitive topics such as personal competences and skills. Therefore, reflective sessions were included in the learning course to provide for reflections they needed. The reflective sessions were aimed at knowledge translation among WINN professionals on reflection about dealing with personal hindrances in fulfilling their functional roles and tasks.

7.3

RELATIVIST/PRAGMATIST INQUIRY: THEORETICAL RECAP ON THE DESIGN OF THE LEARNING COURSE

My methodological approach to the learning course is grounded in action science (see Section 2.4). Based on an analysis of their current need for reflection, an action-oriented, interventionist approach was designed, in the form of a learning course. The learning course was directed at addressing the confusion among WINN professionals in dealing with the existential and teleological questions elaborated in Sections 7.2.3 and 7.2.4. To meet their needs, the participating WINN professionals were supported in enhancing their knowledge, skills and competences to develop their practice of conceiving and organizing innovation. The learning course is rooted in the relativist/pragmatist perspective on learning that I discussed in Chapter 6. Both the topics for reflection and the working methods¹¹ may be perceived as "instrumentalization" (cf. Dewey) of that learning course.

11 Both working methods were inspired by Piaget (1971) who distinguished two mechanisms with which people process new knowledge, assimilation and accommodation (see Section 6.2.3), although we might question whether assimilation is sufficient (enough) for processing new knowledge with the objective of conceiving and organizing public policy innovation. Piaget's theory presupposes that learning is most effective when new knowledge has at least some kind of relation with the existing mental framework, causing the learnings to be processed or the mental framework to change. It is therefore important to identify what people who are invited to participate in the learning course see as their learning challenges. Consequently, an analysis of the need for reflection was made prior to the learning process, in the *ex ante* evaluation, resulting in the issues for reflection mentioned earlier.

The design of the master classes refer to Polanyi's philosophy of master-apprentice-based learning that is highly practice-oriented. The master classes were aimed at knowledge transfer by knowledgeable and experienced people, the masters, to the people who were involved in the practice of the WINN program, the apprentices. Knowledge generation and transfer were directed at the evolving innovative practice, mediated by narration, and assessed through reflection. It could not be ruled out that a number of WINN professionals already had experience with and/or knowledge about some topics for reflection. In this case these experienced professionals acted as masters for their less-experienced co-workers too.

Reflective sessions applied Dewey's philosophy of learning in which reflection on experience is the central driver. The reflective sessions were centered around the sharing of and reflection on (personal and/or joint) experiences of WINN professionals in their practice of pursuing water management innovation. Most importantly, the learning course had a pragmatic character, by aiming at generating, consolidating and sharing situated cognition (cf. Lave & Wenger, 1991; Brown & Duguid, 1991) that is dedicated to getting the job done. Therefore, the learning course was designed as a joint experience and not as a traditional form of education, following Bredo's (1994: 5) thoughts that:

[...] education is a matter of participating in a jointly constructed social activity rather than the transmission from one head to another.

The selected working methods will address the topics of reflection. These topics each will serve as substantive input for operationalizing the working methods. The objective is not to go through all the issues individually in order to find a definite answer. In a dynamic environment like that of the WINN program, the list of topics requires, as one would assume, an approach that emphasizes the ability to deal with something that has greater value than being able to give a definite answer. In my view, learning has an essentially ironic connotation (cf. Rorty, 1989): what is learned has a fundamentally temporary relationship with the need for learning. Learning is never definite but is highly volatile, emerging around evolving practices. Learning takes place all the time, inside and outside the learning course, based on what people actually experience in practice.

This means that we must acknowledge that the learning course has a relativist nature. The topics for reflection have a temporal meaning in the learning course. They may be abandoned at any time if the need for reflection, expressed by the participants, shifts under the influence of the internal or external dynamics of the innovation program, the innovative practices that have been developed, and/or as a result of the reflexive nature of the learning course itself. The last remark is important. Through the implementation of the learning course, it may become clear that what was initially assumed as a learning need has been replaced or may have evolved into yet another need. The experiences of the learning course

are likely to unleash new questions. What takes place in the learning course feeds back to the participants by stimulating them to raise new questions. This mechanism refers to the reflexive and unpredictable nature of learning.

Lastly, I would like to draw attention to the contribution of the learning course in developing a community of inquiry in the specific community of social practice of conceiving of and organizing public policy innovation in water management, substantiated through the group of WINN professionals. As indicated in Section 2.4.5 applying an action-science approach implies the active development of inquiry into the practices for which change or advanced knowledge should be produced. In the case of this learning course, the knowledge was produced through reflection and substantiated by the aforementioned topics and methods. The learning course stimulated the active development of a community of inquiry that was composed of both practitioners and me as an embedded researcher. The outcomes of reflection, that is, knowledge about the innovation practice and knowledge transfer in WINN, as well as about the research practice with which this reflection was conducted, were used to change and advance them.

7.4

PREPARING AND IMPLEMENTING THE LEARNING COURSE

This section describes the implementation of the Forum Ervarum learning course during 2005. In 2005, four two-day meetings¹² were held, each addressing different topics for reflection. The learning course program was divided into two parts. In the first half of 2005 two two-day meetings were held. For the second half, an equal series was planned but a definite decision about the number of master classes would be based on an evaluation after the first series, to assess the applied methodology. On the basis of this evaluation, the WINN core team decided to use the same approach for the second half of 2005. WINN's core team decided to combine the learning course's master classes and reflective sessions into two-day meetings¹³, with the aim of enhancing the coherence and interpersonal relations on the WINN team. An additional advantage is that the time spent on the learning course by program management, program support, theme leaders and pilot managers was combined and, therefore, more efficient.

12 In total we organized four two-day learning sessions, in which master classes and reflection sessions were combined (see Appendix).

13 The combined master class/reflective sessions were organized and guided by TNO in collaboration with the training institute Publiek Domein. The reason for this collaboration was due to Publiek Domein's experience guiding reflection sessions.

7.4.1

IMPLEMENTING THE LEARNING COURSE IN 2005: EX DURANTE EVALUATION

The combination of the working methods master classes and reflective sessions were expected to be a productive way of giving Forum Ervarum a concrete purpose. The reflective sessions were to be carried out by two different methods: *intervision*¹⁴ and case consultation. *Intervision* was aimed at colleague support or counselling for problems that emerged from the lack of personal competences or personal hindrances in carrying out the functional role and the tasks that belonged to it. Case consultation was aimed at colleagues helping each other in trying to find solutions for concrete but complex tasks for which they lacked experience. By jointly dissecting the problem and sharing experiences with similar problems, co-workers actively helped each other find a solution. The selected working methods were operationalized based on the topics for reflection, raised in the interviews with the WINN professionals. The previously indicated items or questions concerning each reflective topic served as a basis to arrange the instructions for the external experts performing in the master class. The learning course for 2005 was composed of four two-day meetings. After these meetings, a second round of interviews, in an *ex durante* evaluation, was executed to evaluate whether that learning course had lived up to the participants' expectations.

7.4.2

MASTER CLASSES: EXTERNAL EXPERTS FOR THE TOPICS FOR REFLECTION

In 2005 eight experts from outside the WINN program were invited to give one master class on one of the selected topics for reflection. Most of these issues were covered in the learning course of 2005. In some sessions, the designated master covered more than one topic. moreover the subsequent discussions were not restricted to one particular subject. The discussions were often directed at assessing the relevance of the presented views for (parts of) the WINN program. Some of these discussions were led by TNO and others by the masters themselves. Discussions were recorded during the meetings, both by the WINN professionals themselves and by the facilitators. The WINN professionals responsible for the internal and external communication provided the content about Forum Ervarum on WINN's website¹⁵ (partly based on the reports of the learning sessions provided by the facilitating researchers).

14 I am not sure whether *intervision* is an genuine word in American-English or that it is just a translation of the Dutch word *intervisie*. However the Internet provides some indication that *intervision* does exist in English-speaking regions: *Intervision* is a problem-solving technique where employees in a team or group can request their colleagues to collectively think about problems. It is analytical more than solution-oriented, because the participants in the *intervision* are not requested to bring solutions to the table but ask questions about the context, background and approach of the problem. *Intervision* is mostly based on self-reflection and collective capability development. It is very practice oriented. <http://www.efios.com/blog/2005/07/27.html>. Retrieved in May 2009.

15 See: <http://www.waterinnovatiebron.nl/ClickForumErvarum/Masterclass/Lessonslearned>

7.4.3

ASSESSMENT OF THE WORKING METHODS IN THE LEARNING COURSE

It is virtually impossible to assess the learning impact of each topic for each individual professional involved. Each professional assessed the topic differently based on his/hers mental framework and need for learning at that time. In addition, the *ex durante* evaluation took place months after the first 2005 master class was held. It proved to be close to impossible for the participants to fully recapitulate all aspects of the content with regard to their need for learning at that specific moment. For some indication of what the participants might or could have learned, a summary of the lessons taught in all the master classes is available on the WINN website. An assessment of the working methods¹⁶ is listed below. An assessment of the impacts of the master classes perceived by the participants is given in Section 7.5.

a. Master classes

In retrospect, the participants attributed the four functions to the master classes as working method in the learning course of 2005. First, the master classes provided a source of inspiration by giving more insight into alternative approaches to embed and organize public policy innovation (“innovation can also be organized like this”). Additionally, they served to help develop alternative perspectives regarding innovation as a professional assignment. Second, the classes provided a benchmark function by comparing the WINN program with other innovation or change processes. The participants claimed to have gained more insight into the differences between substantive and procedural innovation and the struggles that are inherent in innovation and change. Third, they offered the participants an opportunity to distance themselves from the frenzy which is part of innovation work at the DG RWS. This was achieved by regularly spending time on collective reflection on daily activities within WINN. Reflection offered insight into the successes and failures of both the collective WINN program as the individual practice of the professionals involved. In addition, the master classes also provided the basis for regular contact between the WINN professionals themselves, just by attending them during the year. And fourth, in the master classes, the first contours of a collective reference framework – what it takes to conceive of and organize innovation at the DG RWS – were developed. Shared experiences provided the stimulus to want to build a reference framework and language together. This proved valuable for the subjects which were relevant for the present-day practice at WINN. In their own way, all masters contributed to constituting the collective frame of reference.

16 Two team building activities allowed them to observe their own behavior within the team. The ‘theater sport activity’ was more appreciated than the ‘singing exercise’. The sessions were rather short and the opportunity for collective participation in physical activities outdoors was reluctantly missed. Next to the specific team-building activities, participants ate together in the daytime and in the evening during the two-day sessions and this contributed to the WINN team-building efforts. This inevitably contributed to team cohesion.

Appreciation of the master classes

The external stimulus provided by the masters made it easier to openly discuss the challenges of and the progress in the WINN program. In addition, questions such as, “What does it mean to be a WINN professional?” and, “At the DG RWS, what links us (WINN) to other innovation initiatives and needs?”, were raised and discussed. The master classes were considered to be non-committal, inasmuch that the presentations and discussions were hardly translated into immediate, tangible actions to improve the participant’s own practices at WINN. According to the respondents this can be attributed to the WINN professionals themselves as well as to the supporting researchers. It was indicated that reflecting on and interpreting the lessons in the master classes needed to be reinforced. One perceived way of achieving this was to provide quicker feedback on the master classes’ results (i.e. reports and presentations), preferably within a week, so as to increase the chance that something could actually be done with the findings, for instance, during the meetings of WINN’s core team. Newly gained insights about substantive matters of concern and/or the generation of knowledge have an immediate value for learning, i.e. changing the innovative practice. Therefore, these insights should be fed back disclosed as quickly as possible. This opinion is understandable, but I would like to emphasize here that learning is not guaranteed through the rapid disclosure of new insights. As one can imagine, new knowledge and insights need some ‘incubation time’ before sinking in and gradually changing practice. And even though, on the whole, the topics for reflection are considered to be recognizable, they didn’t all prove to be relevant for each and every WINN professional at a specific point in time. Some professionals indicated that they had wanted to discuss some more substantive or content-oriented topics, whereas others had great appreciation for the context-oriented, procedural topics that had been derived from the *ex ante* evaluation.

b. Reflective sessions

For the reflective sessions, the professionals were divided into two subgroups: a group composed of the programme manager, the members of programme support, and the theme leader Platform; and a group with the other theme leaders and the pilot-projects managers. This division was based on the assumption that each group would have a different need for reflection because of the divergence in their day-to-day experiences at WINN and in their evolving practices. The former group developed their work practice around tasks for managing and supporting the program as a whole. The latter group developed their innovation practice based on tasks that were directed at one specific part of the program that was either an innovation theme or a pilot project.

As indicated earlier, the reflective sessions were carried out by intervision and case consultation as the working methods. In the first session (February 2005) of the learning course, the reflective sessions were executed using the intervision method. For the group of theme leaders and project managers, it became immediately evident that this method did not meet

their expectations for reflection. The group demanded reflection on the practical challenges in their roles, rather than on personal dilemmas or individual effectiveness. As a consequence, intervision was abandoned for them in favor of case consultation which proved a more suitable working method for their specific needs. For the other group intervision was used throughout the entire year as their working method for reflection.

In retrospect the participants attributed the functions shown below to the reflection sessions. The intervision method was well rated as was the support it provided. Participants were interactive when reflecting, asked good (in-depth) questions and created a safe environment. Intersivision generated the following support for this group:

- Reflection on personal performance and challenges;
- Reflection on mutual relationships within WINN;
- Contemplation on each other's roles and how these roles should be realized;
- Revelation of tension between personal and program performance targets.

Case consultation proved to be particularly appropriate for the theme leaders and project managers group. Case consultation was seen by this group as an effective way to start discussions. The informal consultations that theme leaders had in 2005, outside the learning course, were mentioned as a direct result of case consultation. Case consultation had the following functions:

- Exchange of ideas and experiences on the approach to and the progress of themes and pilot projects;
- Exchange of ideas regarding the governance of the WINN program as a whole;
- Collective analysis into embedding WINN better in an (internal) environment, in particular within specialist agencies of the DG RWS where theme leaders work on a daily basis (as their formal organizations);
- Collective analysis into introducing innovations through WINN to colleagues at the regional agencies of the DG RWS;
- Collective assessment of the information provided by the masters and application of these lessons in their own practice of public policy innovation.

Appreciation of the reflective sessions

A perceived disadvantage of working in separate subgroups during the reflective sessions is that the professionals perceived a (growing) gap between the groups. The professionals indicated that this increased the danger of becoming (more) divided instead of being more connected. In addition, they indicated that the reflective sessions spent too little reflection time on the question of how the lessons from the master class and the subsequent discussions could be applied to WINN. This led to the provisional conclusion that perhaps intervision was not appropriate because this method did not automatically provide an evident

relationship with the master classes. Intervision seemed isolated from the master classes because it did not offer a direct opportunity for elaborating on the master's lessons. Instead, personal issues were discussed, often with only a remote connection to what was discussed during the master class. Apparently intervision did not follow up on the observations of and discussions with the master. It is not clear whether this was entirely due to the method itself or to the dynamics and composition of this specific group. Case consultation was perceived as a better method for theme leaders and pilot-project managers because it enabled them to reflect on their own personal practices and assess the lessons and discussions with the master. Case consultation proved to be effective in improving the sharing of experiences between theme leaders and pilot-project managers, with the observations of and discussions with the master as food for thought.

7.5 IMPACTS OF THE LEARNING COURSE IN 2005 (*EX DURANTE* EVALUATION)

To assess the impacts of the learning course, all participating WINN professionals were interviewed using an item list that identified changes in what I propose to call 'innovation artefacts', such as objectives, responsibilities, tasks, knowledge resources, etc. (see item list, Appendix 1). As indicated earlier, it is difficult to precisely determine the type of support the learning course provided the professionals for their tasks.

7.5.1 LEARNING IS ABOUT CHANGE, BUT WHAT CHANGES IN INNOVATION PRACTICE ARE INDUCED BY THE REFLECTION?

In order to gain insight into the evolving practice of the WINN professionals, I have elaborated on my definition of practice described in Section 5.3.1, into separate aspects that could be put before the respondents in the sequential evaluatory interviews. These aspects should be relevant for the professionals involved as they attempt to conceive of and organize water management innovation in their specific roles. I have formulated these aspects of innovation practice as follows:

- The objectives the professionals employ for themselves;
- Their perceived tasks;
- Their definition of and assumptions about the concept of innovation;
- Their description of their role;
- Their perceived responsibilities;
- Their perspectives of the environment;

- Their developed contacts and relationships; and,
- Their acquired expertise and information.

Through the anticipated insights into the evolving practice of public policy innovation in WINN, I presume to be able to assess the changes in it that were caused by the learning course. With this in mind, an attempt was made to reflect on the impact of reflection that can, perhaps, be recognized through the changes in the different aspects of practice. However, it is important to emphasize the indicative nature of the changes in the various aspects of innovation that were supposed to be brought about by the reflection in the learning course. Changing (i.e. learning) takes place all the time in a social work environment, such as a department or team, because of the individual's interaction with this environment. Changes in the social environment may result in changes in practice on an individual level. Here, practice is understood by aspects such as assumptions, objectives, tasks and competences which professionals use to execute their innovative work¹⁷. But the WINN program is definitely not the only social environment in which innovators perform, and the learning course was just one specific part of that program. There were also actions instigated by standard organizations, many of which were from departments within specialist agencies, that led to changes or adjustments to individuals' practices of innovation. It is difficult to discover and interpret which actions led to these changes. Therefore, it is no surprise that the interviewees found it difficult to indicate whether they had changed because of the reflections provided in the learning course. However, according to the respondents, different components of their personal performance changed due the learning course or have led to a change or an adjustment to their practice in WINN.

7.5.2

GENERAL IMPACTS OF REFLECTION PROVIDED BY THE LEARNING COURSE

All respondents indicated that their practice of public policy innovation for water management changed through the reflection provided in the learning course, but they found it difficult to determine precisely how this change was brought about. However, based on the defined aspects of innovation practice, the respondents were able to distill a number of general impacts of the reflection process, indicating in what way it had helped to advance their practice in the innovation program. The changes are indicated in parentheses and refer to different aspects of innovation practice. These changes will be described further in Section 7.5.3. In general, the learning course's reflection on separate aspects of the professionals' practice concerned the following patterns:

17 Brown and Duguid (1991) refer to work practice, but since the work of the WINN professionals is developing practices for public policy innovation for water management, I prefer to refer to innovation practice.

- An increased context sensitivity¹⁸, awareness and actions taken by an improved societal orientation on innovation (see Section 7.5.3. ‘Have Tasks Changed?’);
- The recognition that there are two types of contexts relevant to the development and progress of WINN: the internal context, meaning outside WINN but inside the DG RWS; the external context that is outside WINN and outside the DG RWS (see Section 7.5.3 under ‘Has the Perspective on the Environment Changed?’);
- More sensitivity for the consequences of changes in the context of WINN, inside and outside the DG RWS (see Section 7.5.3 under ‘Has the Perspective on the Environment Changed?’);
- A wider perspective on innovation from within the DG RWS and its possible impact by looking beyond the specialist’s role (see Section 7.5.3 under ‘Are there Other Contacts/ Developed Relations?’);
- A better understanding of organizing runways for innovative pilot projects and more insight into the favorable preconditions for potential runways (see Section 7.5.3 under ‘Have Responsibilities Changed?’);
- Opportunity for improving the status of matters within WINN (see Section 7.5.3 under ‘Have Objectives Changed?’);
- Discussion regarding the present status of WINN in connection with possible measures to monitor changes in the environment (see Section 7.5.3 under ‘Has the Objective Changed?’);
- More understanding of the course and dynamics of innovation processes and about the recurring tension between giving space and providing steering¹⁹ in innovation efforts (see Section 7.5.3 under ‘Has the definition of the conception Innovation Changed?’);
- More insight into the content of each of the themes and pilot projects which improves intercommunications between the WINN professionals involved (see Section 7.5.3 under ‘Has the Perspective on the Environment Changed?’);
- A better understanding of the importance of planning an innovation strategy and implementing a structured approach (see Section 7.5.3 under ‘Have Responsibilities Changed?’);
- A better understanding of one’s own functional role and performance in WINN (see Section 7.5.3 under ‘Are there Changes in the Performance of your Role?’); and,
- A better understanding of the personalities (characters) of all WINN colleagues (see Section 7.5.3 under ‘Are there Changes in the Performance of your Role?’).

18 In Dutch: contextgevoeligheid.

19 This tension is also characterized by the tension between pig-headedness and being sensible; between being creative and cautious.

In these remarks about the general support of the innovation practice of WINN professionals, the words ‘more and better’ are often mentioned as an indication of the experienced support for the individual’s own practices. These words show that the learning course added something to the actual practices in the innovation program but it proved difficult to capture what that additive precisely was. As one of the professionals said:

In general, the master classes were inspiring but it is hard to say what I learned from them exactly.

The provisional conclusion is justifiable that WINN professionals were open to this kind of support of their practices, or, at least, that they recognized this learning course’s reflective influence on their practice. In most cases, the type of support provided concerned awareness, knowledge acquisition and transfer, and more in-depth understanding. This was not always translated into specific, immediate action or change. This is understandable because WINN’s status as an innovation program was described by those interviewed as a continuous searching process in which it gradually becomes clear which direction the program should be going²⁰. This searching process is never really finished because renewal and innovation are linked to confusion, insecurity and obscurity. The search to unravel security and clarity can be seen as a source of energy for innovation. The search for new interpretations, solutions and connections is the driving force behind innovation. The WINN program reflects this quest. The learning course recognized this quest, as one of the professionals indicated:

The learning course gives me some sense of direction for moving with an ever-changing environment. It has made clear that apparently we are not capable yet of informing our closely related [policy] environment and, vice versa, learn from it what is going on.

Next to the learning course’s contribution to the continuous search process that innovation at the DG RWS tends to be, a number of interviewees pointed to support for the formal program procedures, meaning the core team meetings. The learning course provided the opportunity to collectively search for a good contextual embedding of WINN in the DG RWS, and in the world of innovative water management as a whole. During the learning course, time was taken to reflect on the evolving state of affairs, to form new thoughts and opinions, and to take corrective action and measures. WINN’s core team meetings were much more inclined to focus on program-related progress (details, procedures, appointments and reports) and decision-making.

20 Innovation refers to change, and change relates to searching and learning.

7.5.3

ASSESSING THE IMPACTS OF REFLECTION ON SEPARATE
ASPECTS OF INNOVATION PRACTICE

The following section covers the change in innovation practice by elaborating on changes in what I decided to call aspects of the practice of innovation. Based on Section 5.3.1 I refer to assumptions, objectives, tasks, responsibilities, role perceptions, perspectives on the environment, external contacts and relations, and the use of knowledge and information along which the WINN professionals develop, perform, and change their innovation practice. The following paragraph provides specific insight into the question of whether the actual practice of the WINN professionals has changed under influence of the reflection provided in the learning course. Assessment of the professionals' interviews on this matter indicates that there are certain patterns along which changes in aspects of their practice revolve.

Are there changes in the definition of or assumptions about the concept 'innovation'?

The interviews indicate that most of the WINN professionals did not make explicit changes to their definitions of innovation. They indicated, however, that they tend to look at innovation in a different light, by rephrasing that innovation refers to:

- structural changes in water management from a long-term perspective and involving more and different parties to the carrying out of new short-term adjustments with a small internal group of people;
- the importance of external dynamics as a driving force;
- dealing with risk while, at the same time, keeping an eye on results. Taking initiative and confronting this with the (opposing) opinions of others is inherent in innovation;
- the importance of communication to prepare those involved and stimulate them to accept renewal and change; and,
- the idea that there are more ways to organize innovation, all of which can have their value.

The influence of the learning course on the professionals' perceptions of innovation is accurately captured in the following quote:

I have not fundamentally changed my idea about innovation, although the learning course has made clear that some things only do change under external pressure. There must be a fundamental feeling of urgency to initiate change. Knowing that change is needed appears not to be enough. But, are we willing to take risks when we experience external pressure? Are we capable of seeing perspective?

Have Objectives Changed?

According to the interviews, there were no big changes in the objectives that the WINN professionals implemented individually. Some of professionals interviewed indicated that more attention was given to procedural innovations and contextual objectives of innovation, next to the obvious substantive objectives. Procedural objectives, such as supervision, monitoring progress and coaching, have partly replaced the purely substance-oriented goals. However, during the execution of the learning course, a considerable change in program objectives emerged, regaining and strengthening its focus on long-term societal developments and its expected contribution to the DG RWS' future tasks in water management. The changed objectives strengthened the increased procedural objectives in the innovation practice of the professionals involved. The revised programmatic objective is elaborated on in the section below.

INTERFERENCE BY THE DG RWS' TOP-LEVEL MANAGEMENT

In June 2005 a delegation from the DG RWS traveled to China for a trade mission. Among the delegation members was the DG RWS' top-level management and a small number of WINN professionals. During this trip top-level management expressed its concern over the substantive progress of the WINN program, mainly with regard to the underdeveloped long-term focus of the innovation program. It was their perception that WINN had too much focus on short-term, technological innovations whereas WINN was also established to prepare the DG RWS for its future tasks in water management. Surprisingly, WINN's unclear focus was already indicated by the professionals themselves in the *ex ante* evaluation (see Section 7.2.3). They revealed that the formulation of the 'theme plans' was lagging behind. These theme plans were supposed to be the long-term societal outlook on each of the WINN themes, providing a guideline for identifying and launching new innovation projects.

The concerns of the DG RWS' top-level management were reported back to WINN's core team. They discussed what had to be done to bring the program back on track and regain legitimacy from top-level management. It was decided that a meeting with management was necessary to learn exactly what their concerns were and how they could be tackled. At this meeting (mid-October 2005) WINN was requested to answer the following question: "What societal tasks can the DG RWS expect in the next decades with regard to water management?" The answer(s) to this question will identify the upcoming challenges to challenges for the DG RWS.

To answer this research question, WINN started an investigation into the societal developments and needs for the next decades and their repercussions (the so-called desk study on long-term societal developments), that will be one of the stepping stones for deciding on the DG RWS' innovation objectives: fewer small, technologically-oriented innovations, and more large, procedural, societal-inspired innovations.

Thus, the WINN professionals decided that active intervention by the DG RWS's top-level management was needed to refocus the innovation program. The professionals' concern about the apparent lack of internal legitimacy of the program was immediately incorporated into the learning course, initiated by the contact person(s) for the learning course. The issue of the legitimacy of WINN became an topic for reflection for the third and fourth master class/reflective session. This topic stipulated the selection of masters who were expected to have expertise and experience in dealing with issues of legitimacy in the public policy domain. The legitimacy question was dealt, then, by masters who were briefed on the specific needs of the WINN professionals at that time.

The third master class was mainly dedicated to an existential discussion on the progress and focus of the program. This discussion was used to prepare a meeting with the DG RWS' top-level management, perceived as the formal 'progenitor' of WINN. The WINN professionals had an in-depth discussion with the invited master on what questions to ask top-level management for the upcoming meeting and what their expectations and the perceived expectations of the top-level management might be with regard to the outcome of the meeting. But also seemingly trivial questions on the duration of the meeting, the day schedule of the top-level managers (what other meetings would they have prior to and after the meeting with WINN?) and whether the meeting would have an informal (lunch meeting) or a formal (agenda, notes) character, were discussed. So, the expertise of the master was pro-actively used to discuss and decide upon the form and substance of the planned meeting with the DG RWS' top-level management.

Between the third and fourth master class, the meeting with top-level management took place²¹, involving most of the members of WINN's core team. The main outcome of the meeting was that WINN would make a serious effort to regain focus by investigating the long-term developments that would impact future water management in the Netherlands. The discussion with top-level management recalibrated the objectives of the program because of their decision to put more emphasis on societal issues and needs for the long term. WINN had to make an inventory of major societal trends and translate them into challenges for water management. These challenges then had to function as an evaluative framework to identify the organization's needs for change and innovation of its water management tasks (see also Section 1.2.2). These organizational needs then had to be translated into new initiatives for public policy innovation in water management that could be executed through the WINN program (e.g. in innovative pilot projects). Note that these innovation initiatives, aimed at substantiating the long-term needs of society, inevitably have a longer time horizon than the changed organizational objectives of the DG RWS' Business Plan 2004-2008. There

21 In October 2005.

will, no doubt, be tension in trying to achieve them simultaneously. This was pointedly expressed by one of the theme leaders:

The transformation to a more long-term focus on water management innovation means that we will move away from short-running projects. This is exciting because I expect that we then will address the issues in a more integral way... In addition it will be a challenge to connect the current pilot projects to the desired long-term perspectives on water management.

The tension between long-term thinking and ‘managing things’ with a short-term focus was illustrated by one of the members of program support:

The desired shift towards a long-term perspective does not mean that theme leaders cannot be busy with formulating visions only, they will have to be able to decide on a timeframe, milestones, and products [... of their innovation efforts]. Based on that, people will have to be assigned to realize them... there will increasingly more emphasis on process management, instead of scientific validation or substantive expertise. Hence, you will have to make compromises to get results.

The fourth master class/reflective session was devoted to interpreting the outcome of the meeting with the DG RWS’ top-level management, again with aid of two masters who served as external experts to the group. It was clear that the objectives of the program were to be modified along the interpretations the WINN professionals had of their discussion with top-level management and with each other. In this session the internal and external legitimacy of WINN as the DG RWS’ key innovative program on water management was re-evaluated. This resulted in an extensive existentialist discussion among the professionals, raising such questions as “Why was this innovation program established?”, and “What should we achieve for regaining support from our organization’s top-level management (internal legitimacy) as well as from the Dutch water management field (external legitimacy)?”

On the first day of the fourth session, the invited master extensively discussed the responsibilities and expectations of all team members who were involved in WINN. In his view the whole team includes all functional roles in WINN (see Section 7.3.2), including the program board and top-level management. Each of the functional roles could be held responsible for the success and failure of the program, he advised. This depends on how professionals in their functional roles communicate with each other. Top-level management should not be treated as a distant force but should be actively involved in the continuous evaluation of the program’s progress. The same applies to the responsible ‘governor’, that is the deputy-

minister for Water Management²², although she²³, as one can imagine, is not accessible on a daily basis to WINN professionals.

The second master walked the participants through the value of continuously analyzing the internal and external environment of the WINN program. This master addressed the seemingly invisible relationship between internal and external stakeholders around WINN and their ability to provide or deny legitimacy to the program's substantial focus and progress. The opinions and actions of external stakeholders will significantly effect the opinions of internal stakeholders about the program, and vice versa. In addition, with the aid of this master, some first steps were made to translate the interpreted outcome of the meeting into tangible actions that would meet the expectations of the DG RWS' top-level management. The lessons from these sessions were more or less incorporated into the objectives the professionals set for themselves, as we might conclude from one of WINN's theme leaders:

The change in objectives has everything to do with the fact that I now pay more attention to the context of the intended innovation. What are the societal issues, and how can I connect my substantive innovation theme to them?

And:

I have reformulated my objective in the sense that I want to support the progress of the pilot projects more explicitly. More co-thinking, through acting like a sound board. But also stronger steering on preconditions and pro-actively searching for alternatives for bottlenecks that have arisen.

Or, as another theme leader stated:

My objectives have not changed dramatically but I see new ways to achieve them. The long-term focus has been brought to the forefront, and must be expressed among others in the improvement of the public image of DG RWS and the Netherlands²⁴ in the domain of water management.

One of the theme leaders specifically referred to the political aspect that was attached to the legitimacy issue:

22 In Dutch: staatssecretaris.

23 At the time Mrs. Schultz van Haegen was deputy-minister at the ministry for Public Works, Transportation and Water Management.

24 In Dutch: de BV Nederland.

The issues in the last two master classes were very relevant and gave a positive impulse to the WINN program... Yes, the insights into the potential political impact of innovation was refreshing. The effort of connecting to political circles has been put on the agenda consciously, and has resulted in new ideas. For example, the enactment of a U-turn: appealing to politics by addressing societal issues... And this is also the way for attempting to bypass the internal coat²⁵ to connect to the top-level management for our innovation initiatives.

Overall, the first *ex durante* evaluation indicated that because of WINN's changed focus, the professionals were aware of the new demands on their role that these changes would bring about. Everyone endeavored to fulfill this role (see comments under 'Have tasks changed?') at the risk of their role perception becoming even more diffuse. In any case, both core roles appeared to put more emphasis on a strategic approach towards relations with their 'allies' at the DG RWS.

Have Tasks Changed?

Tasks are activities which are undertaken to carry out a determined functional role. Tasks are expressed in the answer(s) to the question, "What do you do to get your job done?" The broader perspective towards innovative work in general, which developed in particular through the learning course, resulted in a more process-oriented way of thinking and of taking action. This way of thinking has now become part of the tasks that WINN professionals see for themselves, especially for the theme leaders. These tasks have become manifest in approaching and involving a wider variety of internal and external actors. Professionals tend to opt for a more 'environmentally focused' approach, for example, in making links between innovation on one side and policy and political-administrative contexts on the other.

There is an additional shift in tasks from initiating substantive innovations themselves to creating advantageous preconditions for innovation initiatives, for instance, in one's own organization, or in one of the specialist agencies of the DG RWS. This means that the tasks to support the progress of ongoing innovative pilot projects are more important. A change has taken place from 'creating something new yourself' to 'supporting, executing and monitoring initiatives from others'. This was partly due to the expanded scope of the program which made it impossible for the professionals to take all necessary initiatives themselves. This expansion is seen by some as a negative side effect because it reduces the transparency and the possibilities to influence the program directly. An additional change in tasks mentioned by the WINN professionals was brought on by the program's changed focus in the second half of 2005. It has become more important to consider the long-term perspective of all activities in WINN. Consequently, the changed focus became a topic for the learning course as well (see also 'Have objectives changed?').

25 In Dutch: mantel.

Have Role Perceptions Changed?

Partly due to the influence of the learning course, the role perceptions among the WINN professionals are continually changing. During the learning course, it became evident that the functional roles were not yet determined. At the same time, the professionals expressed the need for clarity about the functional roles within the innovation program. Two roles were roughly discerned, following the nature of the practice these groups developed in fulfilling their specific tasks. The first is a strategic type of role, primarily carried out by program management. The second role has to do with expanding the program's substantive orientation and is generally carried out by the theme leaders, e.g. by initiating new pilot projects. There are two reasons for confusion about these roles at WINN. On the one hand, it was not made clear what the expectations were regarding each other's role. It was not clear 'who does what?', and also it was unclear 'who is *not* doing something? On the other hand, changes to their roles are still under the influence of a turbulent internal and external environment. Most WINN professionals are carrying out several roles at the same time. This is particularly the case for the theme leaders as they have to simultaneously accommodate their role of being 'an innovator' and their formal work description at one of the specialist agencies, in a dynamic institutional context, due to the intended re-organization of the specialist agencies. It was perceived to be virtually impossible to harmonize and reconfirm several roles while in a pluriform and dynamic context.

Have Responsibilities Changed?

Due to the impact of the learning course itself but also to the changes in WINN's organizational context and external environment, the following changes in responsibilities were indicated by the participating professionals:

- more emphasis is being given to relationships in their own professional (DG RWS-related) networks in the different roles at WINN;
- more attention is being given to responding to strategic questions from the the DG RWS organization itself and from society. WINN should be able to translate these questions for the future role of the DG RWS;
- better internal legitimacy of WINN is ensured through improved involvement of internal actors, for instance, the DG RWS' top-level management;
- the internal legitimacy of WINN is considered to be a guideline for taking one's own responsibility, in each functional role.

Have Perspectives on the Environment Changed?

As indicated in the above, there are two types of environments that are relevant for WINN's focus, progress and continuation:

1. the internal environment, which means outside WINN but inside the DG RWS,
2. the external environment that is outside WINN and outside the DG RWS.

The learning course has led, in part, to the recognition of both types of environments. In addition, it has influenced the development of mutual perspectives on both environments. Earlier, it was acknowledged that the internal environment required more attention to develop good relations with the DG RWS' top-level management, the specialist agencies and their top-level managers²⁶, the DG Water, and with their colleagues at the regional agencies of the DG RWS. The internal environment is now perceived as a potential ally for achieving WINN's objectives, partly because it encompasses the other innovation initiatives at the DG RWS. Lastly, the internal environment reflects the degree of involvement of the DG RWS in innovation and the curbing effects of internal processes.

With regard to the external environment, the interviewed professionals indicated that more attention was required for processes and interests in the political-administrative context. They said that dealing with the external environment requires more consideration of the importance of a good strategy in order to involve politicians and administrators in innovation initiatives. The external environment offers good possibilities for the interest in water innovations to become more visible, thus guaranteeing the continuation of WINN by attracting external partners to advocate for the need for innovation. This, however, requires the competence to 'hover over the process'²⁷ in order to see how the interests are divided, staying free from becoming an advocate for one single interest. Lastly, the external environment offers opportunities to take more initiative to organize innovations with external parties, although it was recognized that this does not happen too often, yet.

Have other Contacts and Relations been Developed?

The increased and changed relationships within the DG RWS can be recognized by the effort to involve top-level management in the steering of the program. These efforts resulted in the changed focus of WINN. Next to this, the learning course led to strengthened contacts between the theme leaders. This was only temporarily the case, however, because after some months the informal meetings between them were terminated. The reason for this remains obscured, but apparently the gains from regular, informal meetings were not significant enough. A reason for this might be found in the fact that they do not genuinely share tasks or practices, which makes collaborative inquiry unnecessary. This observation is further elaborated on in Section 7.8.5.

The professionals indicated that they had developed more regular structural contacts with the top managers of the specialist agencies who are involved in WINN, with the DG Water,

26 The top manager of a specialist or regional agency of the DG Rijkswaterstaat is called HID. This abbreviation stands for Hoofdingenieur-Directeur, which is virtually untranslatable to English.

27 In Dutch: boven het proces hangen.

the central communications department of the ministry of Public Works, Transport and Water Management, and with the support staff at RWS' Director-General²⁸.

The idea of increases and changes in external contacts and relationships was deduced from the indication that more contacts developed with private organizations and parties like knowledge institutes²⁹ and engineering and consulting firms. This was partly caused by the learning course's desire to enhance WINN's outward perspective. But, due to the internal dynamics of the program, more contacts between program support and theme leaders were developed. The reason for this is rather trivial and does not follow from the learning course; namely, from the growth of the program that now contains more pilot projects than a year ago. Moreover, it was indicated that more contacts were contemplated and sometimes established with other policy departments and public organizations in the field of water management, for instance with the Association of Water Boards³⁰, and with other external innovation initiatives and programs in the field of water management³¹.

Lastly, WINN now shows an increased interest in communication with and use of mass media. The external contacts and relations were mainly developed for the single purpose of covering a public event on a theme or pilot, for example by informing the press. However, it was thought that these external contacts should be organized in a more structured way through more bilateral discussions with potential innovation partners and through regular feedback from these discussions to their WINN colleagues. All together the learning course contributed to a greater look outwards by the professionals involved, as illustrated in the following quotes:

I have learned to think through more often the involvement of 'outside people', to break open deadlocked projects or to address new matters.

And:

The change in the external environment of WINN [through the involvement of the DG RWS' top-level management] is impulse for developing new contacts. Thanks to the learning course I have intensified my internal contact in WINN, and also my contacts with my formal organization [one of the former specialist agencies], and with the DG Water.

Has other Expertise or Information been Furnished?

Due partly to the influence of the learning course, more attention was given to alternative information sources that are not necessarily in the field of water management, for instance, the

28 In Dutch: staf DG RWS.

29 For instance, during talks on the establishment of Deltares.

30 In Dutch: Unie van Waterschappen (UvW).

31 Other innovation initiatives at the time of this case study were Bloemblad Water, BSIK/Leven-met-Water.

deputy-minister's speeches³², the Mobility Bill and, for example, the minutes of information meetings of the policy program 'Room for the River'³³. The master classes met, in part, the demand for new expertise. Being part of WINN provided new expertise and opened up new information sources for the professionals who were involved. These alternative information sources are, for example, symposia, innovation meetings at the DG RWS, information about other water-related innovation programs, colleagues at the DG RWS, and studies on developments and trends in adjacent public policy domains. In addition, the initiated change in focus of the program resulted in the use of studies on long-term societal developments.

7.6

IMPLEMENTING THE LEARNING COURSE IN 2006

In 2006 the learning course Forum Ervarum was organized for the second consecutive year. Based on the first *ex durante* evaluation, some adjustments had to be made to meet the evolving needs for reflection and learning that were expressed by the WINN professionals.

7.6.1

INTRODUCTION

The 'new' learning course had to accommodate three new topics for reflection. The first one was the question of how to redesign the program to provide support for WINN's changed focus. It was important that WINN not only be involved in theme-based investigations in the medium- and long-term of innovation assignments, as well as with the execution of innovation pilots with WINN themes, but also involved in the long-term investigation into society's needs for water innovations. The second new topic for reflection was the question of how to scale-up the learning course for target groups that, up until now, had either been only slightly involved or not involved at all. This concerned WINN's pilot-project managers and the professionals who worked on the companion adjacent innovation program, WnT. The third new topic was how to disseminate the handbook 'Learning-to-Innovate'³⁴. This handbook was written to provide both WINN and WnT professionals, as well as other inno-

32 The deputy-minister Mrs. Schultz van Haegen held two relevant speeches for WINN's substantive focus. The first speech was held at the European conference on Applied Meteorology, September 14, 2005. The second speech was given at the national conference 'Dealing with Climate Change in the Dutch administrative context' (in Dutch: Omgaan met klimaatverandering in bestuurlijk Nederland, 29 November 2005). Both speeches were accepted as inspiration for WINN's new substantive focus.

33 The program Room for the River is a Spatial Planning Key Decision. In Dutch: Planologische KernBeslissing Ruimte voor de Rivier. See: <http://www.ruimtevoorderivier.nl/files/Files/brochures/EMAB%20PBK%20Engels.pdf>

34 In Dutch: Handreiking Leren Innoveren.

vation professionals, with know-how on conceiving of and organizing innovation in subsequent stages of development, e.g. how to start, support and manage innovation initiatives.

7.6.2

REDESIGNING THE LEARNING COURSE FOR THE NEW TOPICS FOR REFLECTION

In order to link these new topics to the general objective of providing reflection on the WINN professionals' innovation practices, the learning course program was substantially modified in 2006. The master classes, which are the mostly widely used methods within the learning course, were adapted to accommodate the three new topics for reflection. In the spring of 2006, masters were invited to give the first two classes to meet the need for knowledge about long-term developments, scenario building and societal sensitivity. During the third master class/reflective session two of WINN's pilot-project leaders shared their experiences about supervising innovation projects in water management. In doing so, they promoted the transfer of know-how between the group of pilot-project managers and WINN's core team members. The fourth session concerned elaboration on the handbook mentioned above and was organized in collaboration with WnT. During creative sessions in this fourth class, heterogeneous groups of WINN and WnT professionals were asked to think through potential innovative concepts or projects for the policy program 'Room for the River' of the DG RWS.

The lectures by each master followed, more or less, the same routine as described in the methodological design of the master classes (Section 7.3.5). Most master classes were followed by exercises in which WINN professionals could assess and try out the lessons learned on an actual challenge in the program. The exercises were facilitated by me as the embedded researcher, sometimes with the aid of a designated master(s) and other TNO-colleagues. The lectures, as well as the exercises, were aimed at addressing the new topics for reflection. The design and content of the 2006 learning course are listed in Appendix 1.

Supporting the changed focus: the long-term perspective on water management

As indicated, a large part of the learning course, the master classes as well as reflective sessions, was devoted to coming to grips with the changed focus of the program. Through debate and reflection with the masters, WINN professionals tried out their thoughts on how to improve the program's long-term focus. The specific challenges were elaborated on in more detail in Section 7.5.3. After the master classes, the professionals digested and translated the masters' lessons into some kind of frame or (theoretical) lens with which they might identify and interpret the impact of long-term societal developments on future water management. Based on this, they attempted to develop scenarios for water management as a way to practice and assess the consequences for their (intended) innovation initiatives. Note that, for many professionals, these scenarios were nothing more than a first attempt to come to

grips with future-oriented thinking³⁵. To accommodate the long-term perspective on water management in the learning course, two alternative working methods were implemented: scenario workshops and creative sessions. Both working methods were employed to support the professionals in their attempt to assess the implications that the new substantive focus could mean for WINN's activities and their own innovation practice.

Involving pilot-project managers

Originally, the learning course was designed for the following functional roles in the WINN-program: program management, program support, theme leaders and pilot-project managers. These professionals were questioned on their needs for reflection. However, if we look back at the first one-and-a-half years of the learning course, only the first three functional roles present in the sessions. Only a few pilot-project managers attended once in a while. The reasons given for this were, in hindsight, rather trivial. Some of them did not know that the master classes were also meant for them, having assumed the classes were exclusively organized for program management and theme leaders³⁶. Others did not see the point in attending the master classes and devoting some of their time to reflection. In the first half of 2006, however, word came out that the pilot-project managers wanted to be more involved in the learning course³⁷. For the last two master classes, they were explicitly invited and the content of the sessions were more-or-less tailored to their presence. This was done by giving two pilot-project managers the opportunity to act as masters themselves, sharing their experiences and knowledge about the pilot projects they had been implementing for WINN. In addition, a selection of methods for organizing pilot projects was made from the handbook *Learning-to-Innovate* (see below) to accommodate the learning needs of program management and theme leaders, as well as pilot-project managers.

Dissemination of the handbook Learning to Innovate

The *ex ante* evaluation showed that one of the learning needs was information on how to conceive of, organize and execute innovation projects. For this learning need, two masters were invited who had tangible experience with organizing innovative projects at private sector firms. In addition to their expertise, it was decided by WINN's program management that some form of reference book about how to support innovation processes at different stages of development was needed. This decision resulted in the handbook *Learning-to-Innovate* that was intended to provide this support. The handbook was written for innovating

35 The actual long-term study at WINN (the so-called desk study) was not executed through an elaborate scenario exercise but through trend analysis. The execution of this study was not part of the learning course.

36 It was perceived by the participating professionals that the communication from the organizers of the learning course (me, as embedded researcher, and the theme leader Forum Ervarum) could have been more specifically directed at several target groups within the group of intended participants.

37 Expressed in an evaluative report on the pilot-project managers' roles and positions in WINN, fall 2005. This report was conceived of external to the learning course.

professionals of WINN and WnT, based upon contributions by internal and external experts of methods and who had experience-based knowledge about organizing and supporting innovation processes. The handbook was handed out to the professionals during the last master class/reflective session in 2006. Two of the contributing experts were invited to give a master class on their expertise about new types of contracts for public-private partnerships and societal cost-benefit analysis in innovative projects.

7.7

EVALUATING THE LEARNING COURSE IN 2006: GENERAL ASSESSMENT OF WORKING METHODS, TOPICS FOR REFLECTION, TARGET GROUPS AND MOTIVES FOR PARTICIPATION

This section details the second *ex durante* evaluation of the learning course that was implemented during 2006. Particular attention is given to the methods used in the learning course, the master class and to the learning course's contribution to the innovation program. The reason for a different evaluative scheme was supported by the three aforementioned additional subjects for the learning course this year. The impact of the learning course on the innovation practice of the WINN professionals who participated in the master classes was evaluated in the first *ex durante* evaluation (in 2005), and then in the *ex post* evaluation over the next two years that the learning was in place.

7.7.1

GENERAL IMPACTS OF THE LEARNING COURSE IN 2006

In general, the evaluation of the 2006 learning course was predominantly positive, in the sense that all of the professionals interviewed acknowledged its value for the development of the WINN program. None of them negated the positive influence the learning course had in supporting the course of events in and around the innovation program. However, this positive evaluation is based on diverging factors, immediately indicating that each participant experienced the learning course differently and may have benefited from it in various ways. In this respect, some interesting aspects in the evaluation of the learning course need to be highlighted.

First, the learning course was appreciated for providing up-to-date knowledge for the current stage of development of the program, by addressing the three new topics. Secondly, the course facilitated the relationships between the professionals in their different functional roles at WINN. The fact is that, before the learning courses, they had hardly ever met each other. This would make the development of a collective practice inevitably difficult, to say the least (see also Sections 7.8.5 and 8.2.6). The learning course facilitated regular face-to-face interactions. Thirdly, the learning course provided more insight into what is necessary

for organizing innovations. Innovation is not just about technical-content knowledge but also about social, process-oriented know-how and judgment of human dynamics. Fourthly, the course was a source of inspiration for professionals' roles and tasks at WINN, but also for the practices of the specialist agency at which they work. Participants claimed to have learned to look at innovation tasks differently. Finally, and especially important, the learning course gave WINN professionals the opportunity to reflect on the procedures and their own roles and duties in the innovation program. It was particularly the reflection on the idiosyncratic ways in which innovation at the DG RWS was organized that gave participants more insight into alternative ways to approach the objectives for innovation.

It is remarkable that the last four items were also mentioned in the *ex durante* evaluation for 2005. This means that there tends to be some consistency in the perceived support the learning course is providing.

Besides these positive views on the learning course, there was also some criticism regarding its implementation. First, there was the perception that the course used an (overly) instrumental approach. The learning course should provide more than just new methods or approaches to substantiate their evolving practice of innovation. Perhaps the added value of reflection provided by the learning course had them contemplating the questions of whether public policy innovation *can* be organized, and if so, how? Reflecting on their actual experiences in WINN somehow reveals the professionals' actual capacity to deliberate innovation in the public policy domain of water management. This capacity could be assessed in a safe and secluded environment with colleagues who are in the same boat. The advantages of the master class proved to be quite limited if there were not enough discussions about how to apply these methods in the WINN program.

Second, there was the perception that the course tended towards an overly content-oriented program. Sufficient attention and time must be given to discuss WINN's procedures, its right to exist, its techniques and its future embedding in the changing RWS organizational constellation³⁸. In short, some room should be left to talk about WINN itself with the aid of an external master.³⁹ This criticism was based on the last two master classes/reflective sessions that were, according to the respondents, crammed with too many lectures and didn't offer enough opportunities for discussion and reflection. The lack of interaction in these two sessions seemed to almost immediately diminish the advantages of the learning course, devaluing it to a 'standard lecture'.

38 e.g. the anticipated foundation of Deltares, Water Agency and Future Center

39 Even in 2006, the master classes with regard to preparing and interpreting the (self-provoked) interference of the DG RWS' top-level management and the subsequent deliberations on changing WINN's substantive focus, were often referred to as being meaningful to this purpose.

7.7.2

CONTRIBUTION OF THE LEARNING COURSE TO THE
IMPLEMENTATION OF THE CHANGE FOCUS

In short, in 2006 the changed focus of WINN (i.e. identifying, assessing and translating the long-term challenges for water management) was executed through the following actions:

- Executing desk study research on the long-term developments in (Dutch) society and translating them into challenges in national water management;
- Composing a DVD with interviews with experts on long-term development in society and in water policy-making;
- Writing ‘Water Challenges’⁴⁰ as a comprehensive overview of challenges for water-related innovations;
- Conceiving of and organizing discussions with societal organizations on the ‘Water Challenges’ as a basis for identifying new innovation projects for WINN (the actual implementation of these discussions followed in 2007).

The learning course in 2006 devoted the first two combined master class/reflective sessions to reflect on the changed focus. In a way, the new focus called for a new set of conventions and competences. WINN professionals had asked to be brought up to date on how to conduct future-oriented research, e.g. exploratory studies and scenario writing. This learning need was accommodated by selecting specific masters. In addition, the need to work from ‘the outside to the inside’ was incorporated again in the learning course because the renewed long-term focus called on the ability to assess society’s needs for water-related innovations.

The changed focus of the program had consequences for the roles and tasks of the WINN professionals. The objective shifted from initiating and ‘navigating’ short-term innovations (e.g. new technologies for water management that can be implemented ‘instantaneously’), to getting the DG RWS ready for long-term societal trends by identifying the future societal requirements⁴¹ for water management. The question is, subsequently, what the contribution of each role can be for achieving the modified objective.

It is clear that each WINN professional had to include long-term and societal perspectives in his work practice. Each of the professionals had to be able to assess and translate future trends that could influence his/her theme or project. They each had to be able to explain, at any time, their contribution to fulfilling the societal needs for improved water management in the future. The value of being able to better explain what one is doing in WINN is captured in the following quote:

40 In Dutch: Wateruitdagingen.

41 Climate change is an obvious development that will have severe consequences for our water management but also endogenous factors in our society were taken into account, e.g. need for safety and security, individualization, informatization, globalization, etc. Notice the resemblance to the technological and (socio-) economic entities, described by Castells (2000), see Section 3.3.

The masters gave me new vocabularies to articulate matters more precisely. Through these alternative vocabularies, I am better able to make clear and powerful statements about what I am doing and what is necessary for innovation... I am getting better at it, I am more able to express the relationship between things.

Another professional expressed this as follows:

I now develop broader lines of thought and have gained better arguments to articulate my innovation efforts.

In this respect, an argumentative or deliberative turn towards public policy innovation among the WINN professionals seems to be the case here. Based on a shared story, they are more able to reason and communicate why they are doing what they are doing. In the specific case at WINN, this means that in all efforts and expressions, more explicit attention should be paid to the long term and to the societal environment of water management. 'Looking (more) ahead' and 'looking (more) outside' are one-liners that indicate the change in focus and subsequent tasks. And this 'looking (more) ahead and outside' could start with taking up the challenge the top-level management has set in a joint effort of the professionals involved.

One would think that achieving the expectations of the DG RWS' top-level management was an acceptable joint task for all, at least for WINN's program manager and the theme leaders. But remarkably, this was not the case. Only the theme leader 'Platform' and the program manager were actively involved, in cooperation with RWS professionals outside WINN. In hindsight, this can be perceived as a missed opportunity to get the theme leaders to do their work (i.e. formulate their theme plans that should provide the long-term assessment of the specific water innovation theme), and for pilot-project managers to translate their experiences back into long-term perspectives on water management, for example, by actively involving the network relations they had developed when implementing their pilot project. The most remarkable fact is that some theme leaders had proactively offered their cooperation in executing the exploratory study (the so-called desk study) but these offers were more or less deliberately ignored by those who conducted the development of the long-term perspective. One of the theme leaders illustrated the lack of cooperation in conducting the exploratory study as follows:

The connection between us remains a difficult issue any way. For example, for the desk study research I had offered my help. At first, my colleagues who were in charge of that, responded in a positive manner, but after that I have heard nothing in return. This may be due to time pressure, but I am disappointed by that.

Perhaps this lack of cooperation had something to do with what I call ‘recurring patterns of behavior’ that were observed during the implementation of the learning course (see Section 7.8.5).

WINN’s program management acquired a new task in intensifying the communication with top-level management of the DG RWS about the progress in developing the long-term perspective. Communication with the DG Water had to be intensified as well in order to work out some differences of opinion on the legitimacy of developing a long-term perspective on water management for the DG RWS. The reason for these differences of opinion is that the development of the long-term perspective was conducted by the innovation program of an executive directorate (i.e. the DG RWS) and not by the policy directorate of the same ministry, i.e. the DG Water. The DG Water had published its own long-term perspectives on water management⁴². Therefore the DG Water perceived the WINN publication ‘Water Challenges’ as a competing and redundant long-term perspective on future water management⁴³.

7.7.3

EVALUATION OF THE APPLIED WORKING METHOD: MASTER CLASSES

The master classes were seen as the most influential experience in the learning course and evaluated, in general, as positive. The quality of the group of masters strongly influenced this evaluation. In this respect, it is not so much a matter of ‘expert quality’ but their capacity to constructively debate and reflect on a certain topic with the participants. It is, above all, the capacity for facilitating joint reflection that makes the master class a relevant method. If there is no opportunity for reflection, then the master class runs the risk of devolving into a lunch lecture and being considered more entertaining than educational. The key to a good master class is to have sufficient opportunities for reflection, preferably with the master.

The master classes that were most frequently mentioned and considered to be the most inspiring were those that referred to the challenge of conducting long-term studies. The master class that gave keen insight into using visualization and creativity in promoting innovative ideas was also very welcomed. The classes given by WINN pilot-project managers, performing as masters for their colleagues, were also positively appraised because they provided a detailed look inside some of WINN’s own pilot projects. These ‘WINN masters’ confidently shared their experiences with their colleagues. In addition to substantive results from the pilot projects, the pilot-project managers also elaborated on the organizational and governance idiosyncrasies within WINN, from their point of view. This was also favorably assessed. But, a few participants found the value of the content of these presentations to be

42 Waterkoers I and II.

43 Although attempts were made to work together with the DG Water on translating the long-term societal developments in scenarios for future water management, active cooperation was never really developed.

meager. And this contrasts with earlier indicated comments that the learning course should not ‘deteriorate into standard lectures’ (see Section 7.8.2).

The participants especially appreciated the debates with the masters and with their colleagues on matters that concerned them. It was indicated, however, that some discussions were insufficiently focused. This was perhaps partly due to the behavioral patterns within the group of professionals (see Section 7.8.5). However, according to the participants, the embedded researcher’s style of facilitation did not prevent ‘tiring discussions’ from emerging. According to them, the embedded researcher should have exercised more control over the course of affairs in the sessions by intervening in debates and preventing them from getting bogged down. The embedded researcher should have been more assertive in steering the progress of the debates and should have been more alert in noticing annoyances among participants. This was expressed by the professionals as follows:

There should be more attention to our group dynamics – [mechanism of] attacking and defending should be managed more. This [mechanism] is especially the case in the plenary sessions, more than in the smaller groups. We should be supported in explicitly expressing what the issues are, and in addressing what is going on and with whom.

And:

The discussion in the master class should be steered a little more, in some cases we kept winning on one specific issue, mostly by those who have the biggest mouth. And to prevent this from happening again, you [referring to me as embedded researcher] should intervene more explicitly.

In the last two master class/reflective sessions, alternative solutions were implemented to avoid the aforementioned pitfall. The first was to hold debates in small groups. Discussions and feedback would be held in plenary sessions. The second adjustment was to use creative methods, such as scenario exercises, to make the debates more productive and lively, thus avoiding ‘mere’ talking⁴⁴.

44 It should be stressed that organizing master classes too frequently, as was the case in the second half of 2006, was considered unsatisfactory for the agenda and workload. An even distribution over the whole year was preferred. Originally, the master classes were divided more evenly over the second half of 2006 but, at the core team’s request, the third master class was moved from 26 and 27 September to 31 October and 1 November. It appears that master classes, where a master is available for the whole day, are appreciated as more advantageous than the sessions in which the master is available for only part of the day. Masters are often more probing in their approach to WINN’s daily routine in a full-day session. It should be noted that this also very much depends on the chosen topic and/or need for support at the time. This refers to the positive experiences with master classes in which the masters spent the whole day with the WINN professionals. In addition to the general appraisal of the master class as a work method in the learning course, the subjects, the participating target groups and the reason for participating were evaluated. These aspects are discussed below.

7.7.4

EVALUATION OF THE CHOSEN TOPICS FOR REFLECTION IN 2006

The masters who were invited to support the program's new focus on long-term innovations proved to be appropriate for covering the present needs for long-term knowledge on societal trends and developments. Lessons learned from the second master class/reflective session were useful for reporting the first results of the long-term focus of WINN, that is the exploratory study. By making use of the power of visualisation the images and challenges of future water management were transmitted to the top-level management of the DG RWS. However, it proved more difficult for some to situate the topics that dealt with the exploratory study (i.e. the desk study) because it wasn't known what the supplementary WINN tasks would be and how these were supposed to be executed. It was also not known how the task for the long-term development of water management should be envisaged.

The masters of the fourth master class/reflective session fit in well because they dealt with the specific learning need of that moment, that is the dissemination of the handbook 'Learning-to-Innovate' Both experts provided a contribution to the handbook and were invited as masters to explain some methods and theories for this publication. The question of how WINN and the DG RWS could productively work with private sector firms in innovative projects was a particular eye-opener for the participants.

These examples show that timing and relevance were important aspects of the 2006 learning course. Thus far, the learning course was mostly perceived as a means for reflection on supporting program management, program support and theme leaders, and not so much for pilot-project managers. This is probably because the pilot-project managers had not been as involved in the learning course as they were supposed to be. But in 2006, an increased number of WINN's pilot-project managers benefited from the learning course as well.

7.8

LOOKING BACK: IDENTIFYING AND DESCRIBING THE IMPACTS OF REFLECTION

The last sections of this chapter (Sections 7.8 and 7.9) are reserved for answers to *the first component of the central research question* (see Section 2.9), that is how to understand the identified impacts of embedded reflection on innovation practice and knowledge transfer, provided by the learning course. This is done based on the *ex post* evaluations from the learning course (fall 2006) which requires a look back at the two years in which it was operative. The retrospective rationale behind this specific period of time is that this was a relatively stable period regarding the institutional context of WINN. From January 1, 2007, the new institutional context for the specialist agencies of DG RWS will be actively pursued (see Section 1.4), changing the institutional context of the WINN program. The next two

paragraphs attempt to identify and describe the impacts of reflection that the entire learning course Forum Ervarum has provided for the group of WINN professionals.

7.8.1

INTRODUCTION

This review is based on an *ex-post* evaluation, executed through in depth interviews with the participants as well as participatory observation by me as the embedded researcher. As expected, it is difficult to make a retrospective evaluation of a series of ‘interactive and reflexive engagements’ that lasted for two years. It is not easy to precisely determine the impact of the learning course on the individual innovation practice of the participating professionals in the program. The difficulty lies in the fact that the innovation program and the learning course were not the only social environment in which the professionals work and learn (see Section 7.8.2). Nevertheless, the next paragraphs show a number of recurring issues that illustrate the impacts of embedded reflection on the development of the innovation practice⁴⁵ in the program. As indicated in Section 7.4, the learning course must provide reflection on the innovation practice of the professionals involved and on the processes of knowledge transfer in the program.

In retrospect I can identify and denominate a number of categories in the generated impacts by the learning course. The reflection on the innovation practice is assessed by through two levels of abstraction on which the innovation practice will evolve, the individual and collective level. The reflection on the processes of knowledge transfer is assessed through two types of orientations to these processes, internal and external orientation.

7.8.2

IMPACTS OF THE LEARNING COURSE ON THE INNOVATION PRACTICE

The impacts of the reflection on the innovation practice in WINN had two levels of abstraction: the individual level and the collective level. I elaborated on both levels extensively in the previous chapter, but these were referred to in the interviews as well, as the professionals often talked about ‘the WINN team’ and about themselves as individual professional.

In reflection and learning, both levels were highly intertwined, shaping each other as they evolved (see Sections 6.4 and 6.5). For the sake of analysis, the levels have been separated. The individual level involves the practice of the professionals that (partially) evolves under the influence of the learning course. The impact of reflection provided in the learning course was identified by the perceived changes in innovation practice, expressed by the professionals involved (see Section 7.5.3). The impact of reflection on the collective level was assessed by examining the contribution to the expected communal⁴⁶ practice of innovation, to the

45 The same items were put before the respondents in the *ex durante* evaluation at the 2005 learning course.

46 I prefer to speak of communal practice instead of collective practice because the former appeals more to the social environment in which this practice is developed, namely a *community* of practitioners.

substantive focus and progress of the program, and to the internal organization and governance of the program. The impact of reflection on the substantive focus and progress of the WINN program captured the changes in the ‘what-question’ (“what does the program aim for?”), whereas the impact on the internal organization and governance addressed the ‘how-question’ (“how do we pursue our objectives?”).

7.8.3

INDIVIDUAL LEVEL: EXPRESSED CHANGES IN THE PRACTICE OF INNOVATION

The professionals indicated that it was difficult for them to pinpoint what the impact of reflection was on their individual practice of innovation at WINN. The impacts were examined by the changes they perceived in their practice, along the aspects of the practice of innovation, such as assumptions, objectives, tasks, role perceptions, etc. (see Section 7.5.1). The assessment of the interviews with the WINN professionals elicited certain patterns along which the changes in the aspects of their practice evolved.

Have you changed the way you do things?

The professionals mentioned the following changes in their practice. First, there was more initiative to ‘go outside’. External contacts were contemplated and established sooner. In some cases, discussions with external parties occurred sooner and more frequently. They found that they had become bolder in collaborating with external parties to develop innovation assignments. Second, as a consequence of the previous change, there was a more strategic approach to their innovation assignments by devoting more attention to the communicative aspects of innovation work. Third, they believe they have become more open to what the DG RWS’ top-level management describe as ‘societal needs for water management’ and how this should be dealt with. Fourth, they see connecting WINN with the DG RWS staff proactively as an additional task, focusing more on creating favorable preconditions for working together on innovation. Fifth, more is being done to situate innovation in its societal context by examining more thoroughly what the driving forces behind their individual innovation tasks are. Lastly, more attention is being paid to developing coalitions to involve the ‘world outside’, mostly private sector firms and water managing authorities, in organizing their innovation work.

Have you developed other competences?

According to those interviewed, the reflection in the learning course provided a clear contribution to altering, and perhaps improving, their innovation competences. The following changes in attitudes, resolutions, capabilities and skills were mentioned:

- The capability to see the innovation assignment from different societal perspectives, and not solely from the DG RWS’s viewpoint;

- The resolution⁴⁷ to approach innovation with a long-term perspective by considering the strategy for it without downgrading it too quickly to the level of ‘design and construct’;
- The resolution to initiate contacts with external actors to build external networks;
- The capability to be more sensitive towards societal needs as the driver for the innovation assignments for WINN. Societal needs are accepted as the starting point to improve the coherence of WINN with innovation assignments in other public policy domains;
- The perceived value of reflecting on procedural aspects of innovation work, and not just on the substantive outcomes, such as new technologies or concepts;
- To act as a representative for the domain of water management innovation;
- The resolution to advise colleagues about their approach to developing external contacts;
- The ability to articulate one’s own innovation tasks by using alternative concepts, argumentations and ideas that were discussed in the learning course;
- The resolution to involve other colleagues at the DG RWS in innovation projects. There is a changed attitude towards organizing innovation tasks more collaboratively;
- The ability to steer more towards key issues and, in doing so, leave other actors, both internal and external, to take care of the executive matters of innovation.
- The attitude of being aware of the internal legitimacy of WINN as a basis for success.

Has your perception of your functional role changed?

The changes in role perception were influenced by the learning course and are described next. First, WINN professionals indicated that they performed more for recognition of their context-related, future-oriented innovation assignment and less for its substantive conception. There was a shift from ‘what’ to ‘how’ which became manifest in a facilitating, instead of self-determining, attitude towards the ‘substance’ of innovation, as the program manager claims:

I have taken on a more distant position from the substance of the pilot projects, and focus more on creating the right conditions for them. Why? Well, both theme leaders and pilot-project managers have grown in their role, and this gives me confidence in letting go. And in the external environment of WINN, there is so much going on that I need to pay attention to.

Second, they indicated a tendency to act more as a link between internal and external parties involved in water management innovation. Efforts have been made to connect with professionals at other DG RWS agencies and with external actors, as one of the professionals indicated:

47 Resolutions, or intentions, for changed action are based on assumptions, and assumptions are part of practice because they are part of the attempt to deal with the problem of context (Lave, 1988) and refer to the particular configuration of human activity (MacIntyre, 1981).

I see myself now developing towards a strategic connector. I take initiatives to bring parties together.

Lastly, strengthening the internal legitimacy of WINN gained more importance in most functional roles. This was partly induced by the expected reorganization of water management responsibilities and tasks for the newly formed specialist agencies of the DG RWS (in 2007).

Have you made changes in your objectives?

The objectives that WINN professionals formulated for themselves did not change dramatically under the influence of the learning course. There was only a gradual change in the professionals' objectives, as a result of the changed focus of the program. Through the exploratory study about the challenges for future water management, it became clearer that WINN's objectives should be outward-oriented and have a long-term focus, assuming that this would enhance the internal and external legitimacy of WINN. As a consequence, the objectives of the program became more explorative and multiform. The objectives of 'design and construct' became increasingly less concrete for the program's innovation themes. Most professionals indicated that they have tried to translate the changed programmatic objectives to objective(s) for their own functional role.

Have you changed your perspective on the environment?

The foregoing impacts show that as a result of the reflections provided in the learning course, participants regarded the outside world differently. They perceived it more often as an ally in their attempts to conceive of and organize innovation, as one of them said:

The environment I see less as threatening or a hindrance for achieving innovation. I have become more sensitive to the importance of good contacts with external parties and for working with them.

More insight has also been gained for a productive exchange between internal and external forces around WINN. According to the professionals, their presence in the learning course made it clear that the outside world can be used to build up pressure to convince the DG RWS agencies of the necessity to innovate and, in turn, the innovation needs of the DG RWS could be deployed as a driver for inspiring external actors to come up with new ideas.

Have you developed other new contacts inside or outside WINN?

The contribution of the learning course as a medium for the actual establishment of new contacts seems to be limited. It is likely that the development of new contacts, perhaps implicitly, occurred under the influence of an increased external orientation of the profession-

als and of the more exploratory objectives they had ‘learned’ to pursue. The professionals found it difficult to distinguish between the new contacts developed due to the learning course and the new contacts they made while performing at WINN and in their formal work environment at one of the specialist agencies of the DG RWS. Most of them indicated that the learning course was at least useful for comprehending the importance of developing, shaping and maintaining contacts within WINN. In addition, they indicated that the learning course had influenced the strengthening of contacts between WINN and the DG RWS’ top-level management, with the changed focus of the program as a tangible result.

The innovation practice of the professionals changed in the sense that their actions gained a more external orientation. Gradually, they have been taking up innovation more as an organizational and relational challenge, instead of solely as a cognitive and substantive task. There is an increased notion of the importance of external communication with other actors in trying to ‘move or seduce’ them to contribute to innovation and change in water management. This is illustrated by the following quote:

Yes, I have developed new contacts with engineering consultancies, knowledge institutes, and policy-makers. These contacts have everything to do with a role switch for me as theme leader, which requires more communication with the external environment.

The professionals indicated that they had learned to recognize that, without the participation of other actors, societal relevant innovation could not be achieved. This recognition materializes in increased connections with the policy and political-administrative environments (e.g. the DG Water and deputy-minister for water management innovation), as can be understood from this quote:

We have more contacts with the DG RWS’ staff departement and with the DG Water now. I try to work along the idea of networks, and pay more attention to the information that flows through them. I try to make productive use of these information flows in the external environment of WINN, for example by monitoring other water innovation initiatives.

Have you used other knowledge sources to perform your tasks?

Again, the answers to this question present a mixed picture. Some professionals indicated that they had used no other knowledge or information sources. Others state that they have indeed used other sources due to the reflective efforts. References to relevant Internet sites and other suggestions made by the masters were investigated. Occasionally, new knowledge and information given during the master classes were passed on to WINN professionals who were not present in the learning course (e.g. some of the pilot-project managers) or to the DG RWS colleagues who were not active in WINN. The participating professionals acted as intermediaries for transferring and sharing knowledge and information with

colleagues outside the WINN program. Nevertheless, the use of other knowledge sources was not only influenced by the learning course. It was also stimulated by the DG RWS's desire to work more from the outside to the inside (see Section 7.3 and one of the topics for reflection course). In addition, due to WINN's limited capacity, needed new knowledge and information was often sought externally. For example, external experts were asked for their assistance to help elaborate innovative ideas.

When we review the concept of practice ideas that were examined in Section 5.3.1, we can retrace the impact of the reflections provided in the learning course on the individuals' innovation practice. As indicated earlier, Wagenaar and Cook (2003: 149) argue to employ a comprehensive understanding of the concept of practice, by including a number of inter-related concepts: "Practice then entails action, community, situatedness, criteria, standards, warrants, knowing, dialectic, discourse, emotions and values". From the changes alluded to above, we can conclude that the impacts of the learning course over two-years' time show some evidence of a changed, and changing, practice for conceiving of and organizing innovation in this specific institutional context. In the previous sections, I have described examples of changes in what I have called 'aspects of practice' (see Section 7.5.1), such as objectives, tasks, role descriptions, responsibilities, and so on.

One of the most prominent changes, perhaps, is the insight and acknowledgment that conceiving of and organizing public policy innovation is not a given, clear-cut and straightforward project-oriented task, but an ongoing process of pro-actively balancing evolving expectations and emerging opportunities. This requires the professionals to be able to conduct their interpretations and re-interpretations on a continuous basis. This was perhaps most obvious when handling the challenge of bringing the program's substantive focus and progress back on track. As a consequence, I suggest an adjustment to my original interpretation of Wagenaar and Cook's (2003) definition of practice by claiming that practice thus means: anything (human) individuals can deploy to perform or to carry out a task, both individually and collectively, within a certain social environment that constitutes and defines as well as appreciates *and interprets* what is deployed. Adding argumentative and interpretative properties to the concept of practice refers to its reflexive nature, and to the process of interpretation and re-interpretation that is related to the act of performing.

7.8.4

COLLECTIVE LEVEL: COMMUNAL PRACTICE

There seems to be some evidence of a communal practice that evolved from participating in the learning course. Based on the *ex post* evaluation, the most frequently mentioned incentives for participating in the learning course can best be described in terms of 'connectedness', 'reflection', and 'inspiration'; words that were literally retrieved from the evaluation

interviews. These terms, then, reveal a burgeoning communal approach to performing in the innovation program.

The opportunity for joint reflection on WINN's progress and each individual's contribution to it is revealed as an important reason for participation in the learning course and for conferring on the question of how to perform in WINN. The reflection on WINN's state of affairs centered around two issues that were continuously put on the agenda by the professionals. First, they engaged in extensive reflections on the legitimacy of the innovation program. Second, the ongoing deliberations on governance and the internal organization of WINN took much reflection time in the learning course. With regard to reflection on the professionals' individual practice, the following reflective and more-or-less successive questions arose from them:

1. How do I actually approach certain challenges for innovation in my functional role?
2. Do I need to change this approach?" In other words: "Is my innovation practice appropriate?
3. If not, how should I go about changing my practice?

According to the professionals, the collaborative reflection generated two 'side effects'. Collaborative reflection contributed to a sense of connectedness and to increased inspiration for advancing one's own innovation practice. Both side effects are described below.

Connectedness

Most participants indicated that, for them, the learning course was about building and engaging in the internal network of innovators within the DG RWS, enabling them to learn about each other's innovation experiences. A number of participants stated that participation in the learning course was part of an implicit mutual commitment to one another at WINN. Participating in Forum Ervarum was perceived as tangible evidence of being a member of the WINN community. One of the significant impacts of the learning course is that it facilitated mutual connections between the professionals, as it appears to have become the central 'meeting place', ensuring continued involvement. Over the past two years, the participants have said that the experience of the learning course has made a clear contribution to the progress and focus of the innovation program. The following quotes are their comments:

I cannot imagine WINN without the learning course.

Without the learning course, I would have had (too) little opportunity to meet my WINN colleagues.

If the learning course were to discontinue, the program would be just a loose number of projects.

If there is (any) connectedness in the program, then we have to thank the learning course for that.

The master classes are the only place where all WINN professionals meet one another and have the opportunity to collaboratively reflect on their experiences.

WINN was nothing and is now something because, through the things we have shared in the learning course, we can now connect to each other more easily. It is not clear to me that this was caused by the issues we addressed or merely by the fact that we were together.

The reflection on the functioning of our team has an important impact. It frees new energy with which we can take on new things. The learning course gives me a good feeling, it serves as team coach that guides us continuously because we can learn by making adjustments to the program as we go along.

Inspiration

The reflection provided in the learning course was perceived as opportunities to 'withdraw from work' and find (renewed) inspiration. This inspiration was gained, in particular, from the masters' abilities to reflect on WINN's state of affairs by looking at things from a different angle. This enabled the participants to see diverging aspects of relevant innovation issues. The meetings were considered both surprising and fatiguing. In addition, inspiration tends to refer to the learning course's capacity to present relevant knowledge of a meaningful, but sometimes subversive nature, from the outside world to WINN. I use the word subversive here because the professionals may have acquired lessons from the learning course that are not line with the formal objectives for innovation at the DG RWS. Next, some professionals indicated that they actively tried to pass on acquired knowledge to other, non-WINN colleagues. What the impacts of these knowledge transfer efforts were could not be retrieved.

Could these incentives be designated the first signs of a communal practice in the near future? Through reflection on innovation practice and processes of knowledge transfer, connectedness and inspiration were apparently provided as a basis for developing a set of shared 'principles' for tackling WINN's innovation assignment. Participants collaboratively conferred on the need for an enhanced external orientation and for an emphasis on a long-term perspective for the challenges to water management. Next, they acknowledged the need for a shift from innovation as a 'private' intellectual responsibility to a collaborative challenge. Following this, they voiced a need for an alternative perspective on innovation as an organi-

zational rather than cognitive puzzle. Lastly, they accepted the importance of internal and external legitimacy of the innovation program as a key principle of its substantive progress and focus.

We might assume that these shared principles could provide a foundation for developing a communal practice in organizing and taking on innovation assignments. But there is little significant evidence that the reflection provided in the learning course stimulated the emergence of a communal practice among these professionals. The reflective nature of the learning course did stimulate discussion about how to tackle innovation challenges. But these discussions did not materialize in concerted actions that could be captured by a communal rule of conduct that some of the WINN professionals had advocated: “When faced with an issue of this kind, we go about it like in this and that way”. Unfortunately, these discussions got stuck in exchanging opinions. The *ex durante* and *ex post* evaluations showed no significant evidence of effectively and pro-actively conferring on what needs to be done, apart from the changed programmatic focus. However, I suspect that mainly the group of professionals concerned with WINN’s program management did confer on ‘which way to go’ on a regular basis.

7.8.5

FINDING EXPLANATIONS FOR THE LACKING DEVELOPMENT OF A COMMUNAL PRACTICE

Many unfavorable factors were present that ‘frustrated’ the emergence of a communal practice. As indicated earlier in this chapter, most of the WINN professionals were professionally and geographically dispersed across several agencies and offices in the country. They work as part-time innovators, in addition to their formal assignments as policy professionals at the DG RWS. They devote only part of their time to WINN, and the rest of their time they work in their formal work environment at one of the specialist agencies with standard routines, interests, relations and authoritative power. WINN professionals typically meet once every six weeks in core team meetings to make decisions on the progress of work. Lastly, they are mainly experts on ‘technological substance’, and not so much on organizational and/or procedural issues. In addition, it seems justifiable to conclude that there are two separate groups at WINN: the group of program management and program support and the group of theme leaders and (some of the) pilot-project managers. Perhaps the confusion about the division of tasks in the functional roles was an additional reason for ‘not practicing together’. Professionals seemed to be reluctant to ‘invade each other’s authority and competence’ and, in turn, had incongruent expectations of what ‘the other is supposed to do’. As a consequence, these groups developed their own practices in the program and were not actively communicating about their practices. This is understandable because each person was engaged in his/her own specific types of tasks, responsibilities and networks. However, in WINN the two groups have practically materialized into two separate communities which evolved around

their practices, responsibilities and contacts with specific other internal and external actors. Several respondents indicated that these two ‘communities’ do not relate to one another effectively. Innovation experiences are not consciously shared between them. In the first year, the learning course tended to further this separation process by organizing the reflection sessions along this ‘demarcation line’. In the second year, this practice was abandoned because of its perceived negative impact on developing communal understandings and practices.

The factors indicated above made the deliberate development of a communal practice more difficult, but not impossible. So, there must be a more profound motive for not practicing together. This motive seems to be that there was no *perceived necessity* to work together on the program’s innovation assignment, thereby developing a communal practice. Apparently, the professionals thought that they did not need each other to reach their objectives and carry out their tasks. Tasks and frames of reference seemed to diverge so considerably that the professionals saw little necessity and/or possibility for conferring and convening on a communal problem-solving practice. Perhaps there are more incentives to develop one’s own ‘private’ innovative practice, or perhaps the learning course proved to be adequate for developing an individual practice, but not for a communal one. This will be further examined in Chapter 8.

A last and perhaps decisive explanation for the lacking development of a communal practice for organizing innovation can be found in the interactions between the professionals during the learning course. Although the assessment of these interactions was not an intended research objective, it was observed that the participants interacted in recurring and fairly resistant patterns. These interaction patterns might also represent their interactions outside the learning course. The assessment of the interaction patterns between the professionals is mainly based on participatory observations during the master classes and reflective sessions. Although these patterns of interaction were identified by me as an embedded researcher during the learning course, they have also been noticed and acknowledged by some of the participants in the evaluatory interviews. The patterns mirror the communication dynamics among the professionals involved. Moreover, they tell us something about the existing organizational culture of the DG RWS, in general, and at its specialist agencies, specifically. The interactive engagements during the reflective activities brought three recurring patterns of interaction to the surface.

The first pattern is that of externalizing responsibility. Professionals showed a tendency to ‘place matters of concern outside themselves’. Failures, inadequacies, bad communication and/or undesirable behavior were initially perceived as invoked by ‘others’ and not by oneself. WINN professionals showed no evident practice of finding ways for effective communication about undesirable situations and solving them together. Pro-active self-reflection on

one's own contribution to these undesirable situations and their possible solutions appeared to be difficult. Two examples illustrate this pattern. First, flaws in the operation of the program were put before the program manager and program management by theme leaders and pilot-project managers, and vice versa. But there tended to be hardly any evidence of productive conferring between these groups on potential improvements in governing the innovation program. Second, inadequacies in the implementation of the learning course were almost always perceived as the responsibility of the embedded researcher, without (even) considering one's own contribution to these inadequacies.

The second pattern refers to the behavior of maintaining separate domains. The professionals seemed to be reluctant to share or incapable of sharing tasks and activities. Every professional was busy minding his/her own business and did not seek active collaboration with or support from other WINN colleagues. This pattern was only broken when 'unfavorable events' happened in the environment of the program and/or when WINN wanted to celebrate its successes, e.g. at an innovation manifestation. The following examples illustrate this interaction pattern. First, the exploratory study on the long-term perspective on water management was not organized, as one is perhaps inclined to expect, as a joint task for program management, theme leaders and pilot-project managers. Instead, a separate group was formed that was composed mainly of professionals outside the WINN program to carry out the new task. Second, adjustments in the internal communication routines were initiated solely by the program manager without conferring about them with other groups in WINN, e.g. theme leaders and pilot-project managers. Third, the informal work meetings between theme leaders, that were initiated as a result of the learning course, were only maintained for a short period of time. After only a few meetings, the theme leaders (apparently) concluded that there was no need to share experiences any more.

The third pattern indicates a tendency to maintain their own competence, integrity or practice frame. Professionals showed a limited capability and willingness to constructively contribute to each other's efforts⁴⁸. There tends to be no significant evidence of productively using each other's knowledge and competences to come up with a collective problem-solving approach. Instead of dialogue, debate seems to be their natural attitude towards communication with each other. This communication mode is ever-present in the learning course, especially in the aftermath of the master's contribution during the master classes. WINN professionals tended to respond in the well-known 'yes, but... – modus'⁴⁹, challenging the master's and each other's opinions. This resulted in debate instead of dialogue, ending up in a stand-off between opinions and not in communal insight and/or readiness for action.

This interaction pattern surfaced when two WINN pilot-project managers performed as masters for their own colleagues in the third master class in 2006. Instead of a constructive

48 In Dutch: het onvermogen of beperkte bereidheid om (iets) aan elkaar toe te voegen.

49 Some say that this type of response is typically Dutch.

dialogue on how to use their experiences for future pilot projects, they were confronted with a fierce, non-constructive debate about how they could have improved the outcomes of their projects⁵⁰. In retrospect, the reflection provided in the learning course did not seem to have much impact on changing these patterns of interaction. It is hard to find significant and positive evidence of a change in these patterns as an indication of enhanced abilities to work together and contribute to one another's innovation practice. Of course, changing the patterns of interaction was not the main objective of the course but it would be feasible for some change to be noticed. Assessing the change in behavior was not one of the evaluative items. Perhaps it is not realistic to presume that it's possible to change the interaction between professionals who rarely (have to) work together, during/after eight learning sessions of two days over two years.

These patterns of interaction have an essentially ambiguous nature. On the one hand, they are important traits of an expert's talents and capacities; on the other hand, they tend to obstruct rapid knowledge exchange and accumulation. However, the observed patterns are quite common for professional, expert or specialist work practices. Especially the latter two patterns refer to professional traits for which experts are usually appreciated. Professional expert work is grounded in an individual's capacity to keep focused and exercise personal reflection. Being an expert is mostly a solitary job; most scholars and policy professionals work independent of others for a large portion of their time. In addition, an expert environment might put pressure on those who work in it to show 'expert behavior', as indicated by one of the professionals:

Also I get the feeling that I am not trustworthy as a conversational partner when I admit that I do not understand some substantive or technological matter. In an organization as the DG RWS it is not a good thing to admit to be ignorant with regard to some specific matter.

The limited capacity of constructively contributing to each other is perhaps grounded in the experts' daily working processes that are characterized by argumentation and debate. It is tempting to enter into such familiar processes, even if this is not productive for collaborative practices in an innovation program such as WINN. With these relativist remarks in mind it is safe to argue that professional expert behavior and the competences needed for public policy innovation are often contradictory⁵¹.

50 In addition the team-building activities (see footnote Section 7.4.3) made perfectly clear that in WINN, it proves to be hard to work together constructively. And in case an attempt to confer on a collaborative problem-solving approach was made in the learning course, this was almost immediately 'frustrated' by the patterns of interaction.

51 When reflecting on the practice of writing a PhD thesis, I must admit that my behavior shows remarkable similarities to professional expert behavior.

7.8.6

COLLECTIVE LEVEL: SUBSTANTIVE FOCUS AND PROGRESS

From the start of the learning course, the deliberations on the substantive focus and progress were a vital and continuous part of discussions among the professionals (see Section 7.3.3). The learning course provided room for these discussions by devoting specific attention to the long-term and strategic issues for water management derived from external (society at large) and internal stakeholders, such as the DG RWS and the DG Water. The continuous discussion about the focus and progress of the WINN program was interpreted through the concept of legitimacy.

According to the designated masters,⁵² legitimacy has an internal and an external orientation. Internal legitimacy refers to support for the innovation program, as in their own organization, the DG RWS. In other words, to what extent does WINN live up to the expectations of the DG RWS with regard to the execution of its core tasks? External legitimacy refers to support for the innovation program in the political domain and in society at large. The question is whether WINN is capable of meeting the expectations that politicians and society have for improvements in water management. The continuous attention to the internal and external legitimacy of WINN led to the notion that this was a key condition for its success.

Interference by the DG RWS's top-level management with regard to WINN's focus and progress was perhaps the most meaningful indication that its legitimacy was at stake. Apparently, it was felt that there was a discrepancy between the operating practices at WINN and the need for innovation perceived by top-level management. The actual innovation practices of the professionals and the managerial expectations had gone out of sync⁵³. Therefore, the most significant contribution of the learning course to the substantive development of the program was undoubtedly its support for assessing WINN's new substantive focus: the long-term focus on water management.

The joint assessment of WINN's new focus comprised both substantive ("do we do the right things?") and procedural ("do we do them in the right way" and "are we entitled to do this?") questions. Contemplating, initiating, assessing and implementing the long-term focus on water innovation can be seen as the main impacts of the reflection provided in the learning course.

There is an indication that participating in the learning course has led to a broader perspective of the context of the WINN program. The broadened contextual perspective can be traced back, in part, to the recognition of the importance of WINN's internal and external legitimacy. There is some evidence of a communal practice of keeping the program on track

52 Invited for the third and fourth master class/reflective session of 2005.

53 This might refer to different theories of action (cf. Argyris & Schön, 1974) that WINN professionals and their top-level management use with regard to conceiving of and organizing water management innovation.

by collaboratively assessing the interference by the DG RWS's top-level management. I propose to label this an indication of a communal practice because it could spark a collectively conceived and synchronized approach to organizing innovation. This starts with a joint effort in making sense of what is going on around WINN. This idea is further examined in Chapter 8.

7.8.7

COLLECTIVE LEVEL: INTERNAL ORGANIZATION AND GOVERNANCE

The learning course's reflective contribution to formal procedures, such as at core team meetings, seems to be limited. The master classes were more or less perceived as specific moments for interaction that have little to do with formal contacts, such as the core team meetings. The interviews indicated that, during these meetings, lessons learned were only barely translated into decisions about the internal organization of the program. It had not been determined whether changes in the organization and/or governance of the program, formally confirmed and registered in the core team meetings, 'should' be inspired and generated by the course. Opinions about this were quite diverse. Some professionals indicated that the learning course's potential impact could have been greater if the master classes had brought about changes in the formal processes in the program. They found that this did not happen enough⁵⁴. Others argued that the learning course should remain 'disconnected' from the formal WINN meetings because of its diverging purpose and format. A complicating factor was that the willingness to participate in the core team meetings diminished over time⁵⁵. Perhaps the formal meetings gradually lost their meaning, as one of the professionals claimed:

The formal meetings in WINN are not important [any more]. That is more or less window dressing, the programme does not evolve around these meetings. To me, core team and WINN board are not important any more.

Another professional described the process this way:

Perhaps the value of the core team meetings is vanished because they have deteriorated into administrative routines, perhaps a new structure is needed.

54 Changes made on the basis of the learning course – i.e. active implementation of lessons learned – are apparently too inconspicuous or not communicated. For example, the program manager's visit to theme leaders (a lesson learned from the learning course in 2005), the visits by the program manager to the larger pilot initiators (a lesson learned from the learning course in 2006), and the preparations and subsequent discussion about talks with the DG RWS' top-level management (October 2005) and the consequent changed focus of the WINN program (a lesson learned from the 2005 learning course).

55 It is difficult to explain why, but it appears that some of the professionals indicated that these meetings had become uninspiring and superfluous.

One significant matter stands out at once when we examine these discussions: the persistent ambiguity about role expectations in WINN. There was a continuing ambiguity concerning all functional roles. The question of ‘who does what, when and how’ was raised constantly throughout the learning course because functional roles were not well determined, according to the professionals. The interviews indicate that they expected that the experienced ambiguity would decrease or at least would be workable when there was more clarity for each role. The need for less ambiguity is illustrated in the following quote:

The relation between the roles of program management, program support, and theme leaders, as well as the mutual expectations, should be better expressed to one another. The expression of expectations is very important at this stage of development⁵⁶. There appears to be a tension between the need for steering and the degrees of freedom that are required for innovation. We must better decide on what we want to be, and if we agree on that, then we must subsequently reach agreement on how we are going to pursue this.

Apparently, among some professionals, there was a perceived need for more structure and ‘limits’ on the degrees of freedom in WINN, as a precondition⁵⁷ for doing the job right. It is clear that this precondition was undermined by the fact that expectations about the functional roles had not been expressed enough, thus remaining implicit, despite the perceived need for explication. The question is what the effects of these implicit or ill-expressed expectations were. First of all, the expectations about each other’s roles appeared to be mutually incongruent, thus resulting in misunderstanding and distrust. This contrasts with the expressed need by WINN professionals for clarity of their own roles and the expectations they might have for the other roles. This clarity seems to refer to the need for a (more) stable organizational setting in which each of the professionals could carry out their innovation tasks. The perceived confusion refers to all functional roles at WINN. However, I argue that it is questionable whether the clarity about roles and subsequent tasks and responsibilities can provide the desired ‘stability’ when the environment in which the professionals operate remains turbulent, due to dynamic requirements from WINN’s external and internal environment. It is perhaps more productive to regularly assess each other’s contribution to the program’s substantive focus and progress. In other words, what are each of the professionals doing to conceive of and organize water management innovation in the Netherlands? This is not so much a question of how roles and subsequent tasks and responsibilities are divided among the professionals, but how the interaction between them is dealing with issues that exceed their individual expertise and competences.

56 Fall 2005.

57 This refers to one issue for reflection, the dilemma of dealing with the tension between formal work and innovation work, see Section 7.2.3. This issue still lingers on.

Next to the endogenous hindrances to adjusting WINN's internal organization and governance, there is another significant exogenous factor that 'blurs' the possibilities of adjustment. As one can image, the upcoming reorganization process at the DG RWS's specialist agencies (see Section 1.3) is contributing to continuous confusion among WINN professionals on the future institutional embedding of the program, casting its shadow on the discussions in the second year of the learning course.

The discussion about what to expect from the future institutional context of WINN severely influences the perspectives for its future working environment. The relationship between these new organizations and WINN had remained unclear because the future tasks and responsibilities in the new institutional constellation still had to be worked out⁵⁸. The new institutional landscape will induce the new specialist agencies, as well as the innovation programs, to establish new working relationships with each other. The perspective of a transitional year (2007) in which the new institutional context would be developed seriously influenced the state of affairs within WINN in 2006. The consequences of the anticipated institutional context were frequently discussed among the professionals because of their confusion and uncertainty about their future working environment.

In the existing context, one of the important challenges was the building of actor coalitions for water management innovation, to be composed of specialist agencies, regional directorates of the DG RWS, other water managing authorities such as water boards and provinces, private sector firms and knowledge institutes. As one can imagine, a changed institutional setting for the DG RWS would start the process of building these coalitions all over again. In addition, complex reorganization processes were expected to result in increased uncertainty and confusion about objectives, responsibilities, tasks and mandates. Inevitably this leads to questions about clientship and ownership of innovation projects and on the governance of the innovation program. It was anticipated by the WINN professionals that these questions would not be clearly answered for some time ahead. Some of the professionals referred to the issue of capturing the progress of the reorganization process as "aiming at moving targets", referring to the ongoing uncertainty and volatility of the future institutional embedding of WINN.

The changed institutional context of the DG RWS's specialist agencies and innovation programs will undoubtedly bend back on the question of how to implement WINN innovations in daily water management routines. The confusion about the new institutional context tends to obstruct the quest for finding answers to questions such as, "How can new innovative insights affect the policy directorate of the ministry (the DG Water) and/or the regional directorates of the DG RWS?" and "How can WINN 'market' its innovations to private sector firms that are active in national and global water management?"

58 E.g. it was expected that WINN and WnT innovation programs would be merged into the Future Center.

Although we might expect that there would be a need for reflection on how to deal with the anticipated institutional context, this topic was not translated into the learning course. The issue had only been casually mentioned in the interviews with the professionals, almost always with the additional (self-)assessment that the decisions in the reorganization process were beyond their range of influence. The views of the WINN professionals on the reorganization process itself were obscured by their opposing interpretations and diverging opinions. During the two years of the learning course, the new institutional context became gradually clearer but remained an unarticulated topic for reflection.

7.9

IMPACTS OF REFLECTION ON KNOWLEDGE TRANSFER

As indicated earlier (Section 1.7), reflection on knowledge transfer in WINN had been somewhat underexposed in the first year of the learning course. However, in the second year, that reflection gained more attention because of an increased effort in this matter, initiated by the Forum Ervarum theme leader as ‘client of the learning course’. This increased attention was visible in the active and regular recording of the generated knowledge about conceiving of and organizing innovation. Being able to transfer the generated knowledge at WINN would contribute to its internal legitimacy and was the underlying motive for the increased attention.

With regard to knowledge transfer, we can conclude that the learning course stimulated knowledge transfer between the functional roles within the WINN program. In addition, the learning course seemed to be an effective device for acquiring and transferring external knowledge on a person-to-person basis. In addition, there were modest signs of the impact of the learning course on transferring ‘imported’ knowledge from WINN to other professionals and departments in the DG RWS. The transfer of knowledge from WINN to network actors for innovation, other than the specialist agencies of the DG RWS, had not been an objective of the course.

The transfer of knowledge in WINN has an internal and an external orientation. The internal orientation includes the mutual exchange of knowledge among WINN professionals and the acquisition and processing by the WINN program. The external orientation concerns the knowledge transfer from WINN to other innovation programs of the DG RWS and to the specialist agencies. In the next sections, the impact of the reflection provided by the learning course will be described along both orientations.

7.9.1

INTERNAL ORIENTATION: MUTUAL EXCHANGE OF KNOWLEDGE WITHIN WINN

The learning course's contribution to the exchange of knowledge between WINN professionals occurred in response to and debates with the masters. This was explicitly the case in the master class/reflective sessions that were devoted to interpreting and substantiating the changed substantive focus of the program⁵⁹. Participating professionals indicated that these debates elicited how their WINN colleagues actually operated in the innovation program. Through interaction with the master and communication with each other 'through the master', knowledge and experiences got exchanged. This exchange of viewpoints, experiences and opinions was deepened in the reflection sessions by collectively 'ploughing through' the question of how to interpret and process the masters' lessons for one's own practice and in the program as a whole. In doing so the professionals exposed their 'personal knowledge' to each other, simultaneously bringing one another up to date with the experiences, progress and challenges they have faced in their functional roles. By no means did this immediately result in an indisputable or shared perspective on how to transfer knowledge to each other. However, it elicited and disclosed knowledge that had otherwise remained obscured. Some professionals indicated that, in the long run, the exchange of personal knowledge definitely contributed to the comprehensive knowledge base that was developed to shape WINN.

Lessons from different perspectives and/or contexts were used to explore the operative state of affairs in WINN. The interviews revealed some indications that the exchanged knowledge in master classes and reflection sessions had influenced the personal knowledge of each of the participating professionals in one way or another. This is illustrated in statements such as,

What he/she said in response to what the master has shared with us,... made me wonder how this can be applied in my theme or pilot project,

And:

I have never seen it like this,... but her approach could be a way of dealing with my own task.

In this sense, some preconditions for learning from each other by sharing and transferring knowledge about personal experiences in performing their practice of innovation seemed to be present. The evaluation of the learning course's impact on developing the professionals'

59 For example, one of the masters had recently conducted a similar large-scale exploratory study in which he had used trend analysis, scenario building, and visualization to involve his organization's top-level management.

individual practice (see Section 7.8) indicates that they actually had translated these learnings to change their own practice.

7.9.2

INTERNAL ORIENTATION: KNOWLEDGE IMPORT AND PROCESSING

The learning course provided an explicit impact on knowledge ‘import’ from the outside to the inside. Especially the master classes were appreciated for facilitating the desired ‘import’ of knowledge from external sources. More attention is being paid to knowledge outside the public policy domain of water management and adjacent policy sectors. This concerns for example knowledge about the organization of innovation processes in private sector firms and about long-term societal developments, provided by scientists or experts of communication and public relations. Through the contributions of experienced and well-esteemed masters, new viewpoints, ways of thinking and experiences were passed on to the participants in the learning course. According to those interviewed, it is difficult to tell how this new external knowledge precisely becomes interlaced in their daily innovation practice and routines. Sometimes just a master’s statement prompted the professional to immediately ‘import’ external know-how but it was often more implicit than this. This is accurately indicated in the following comment:

Based on the stories of the masters I get ideas with regard to my own innovation theme or about one of the running pilot projects. I get a visual of something I need to do... These ideas also relate to the things I have to do in my daily job at the DG RWS [formal work environment].

Another professional claimed the following:

Through the learning course I have gained a better feeling about what it takes to innovate. Innovation is being entrepreneurial, even within the government. Through the exchange of experiences and learning from the lectures [in the master classes] I acquire alternative knowledge. The examples of other [change or innovation] projects show that there are alternative approaches, and that perseverance and creativity matter.

After some ‘incubation time’ and in a specific situation, the master’s know-how and experience proved to be relevant. The knowledge was absorbed, but did its ‘internalization’ into practice become manifest later on? The professionals stated univocally that an increase in knowledge import was hard to attribute to the reflection provided in the learning course solely because of the ‘formally’ prompted change of attitude within the DG RWS to work more ‘from outside to inside’ (see Section 1.3). This is illustrated in one of the professionals’ comments:

The influence of the learning course on my actual practice is indirect... The learning course hands me instruments and ideas to deal with the outside world... WINN has also a weaker connections to formal routines... we are the outer shell of the organization, a sort of interface to the outside world.

And:

I observe a variety of issues that are sinking in with my colleagues, and there is also a variety in time frame in which this 'sinking in' becomes manifest. For each and everyone of us this requires a different time frame. Perhaps we were not up to some of the issues [addressed in the learning course] and we must repeat some of them.

The impact of the learning course on knowledge acquisition, in an attempt to change the 'not invented here attitude' of the DG RWS professionals, can be found in the legitimacy issue, the changed focus and the increased external orientation. The impact of the reflection on the acquisition of external knowledge is perhaps best illustrated by the two interlinked issues that characterize the period in which the learning course was effective: the legitimacy issue and the change in substantive focus and progress of the program. The legitimacy issue came up in the master classes during 2005, when WINN professionals began to question the relevance of their innovative work for the DG RWS and society at large. To assess the legitimacy issue, WINN professionals made productive use of the invited masters, in reflecting on the context and assignment for water innovation and on the expectations of WINN's stakeholders. Deliberations on the legitimacy of WINN made professionals aware of the necessity of discussing WINN's substantive focus and progress with internal and external stakeholders. Various masters provided them with knowledge on how they might do that. Subsequently, the outcomes of the discussions with the stakeholders were interpreted with the aid of the masters and translated into changes for the program's focus.

The new substantive focus, then, led to specific knowledge needs to operationalize the long-term perspective on water management. This knowledge had both a contextual and a methodological component. The contextual knowledge component targeted assessing long-term societal developments and their consequences for water management, whereas the methodological knowledge was centered around the question how to execute these assessments and translate them into scenarios for long-term water innovation. Another issue that was addressed in the same way was the perceived need for a more external orientation of WINN (see Section 7.2.3), characterized by 'working from the outside to the inside'. Throughout the learning course, the masters were challenged to provide the professionals with knowledge on how to continuously assess WINN's context and enhance its ability to interact effectively with its environment.

Recapitulating, I claim that the dissemination of knowledge on how to deal with the legitimacy issue, the long-term focus and the external orientation had an impact on the innovation practice of the individual professionals, as well as on the substantive focus and progress of the WINN program as a whole. In addition, the changed focus towards a more long-term orientation is in line with the desired shift in policy paradigm in the domain of water management (see Section 1.2.2). The efforts of WINN have become more directed now at what I have called public policy innovation, that is, the development of a new policy regime to substantiate the shifted policy paradigm, which makes them more distinct from ‘normal’ policy-making.

7.9.3

EXTERNAL ORIENTATION: KNOWLEDGE TRANSFER TO THE DG RWS’S INNOVATION PROGRAMS AND SPECIALIST AGENCIES

As described in the objectives of the learning course (Section 1.6.1 and 7.2), WINN should operate as a (serving-)hatch for new knowledge on innovation to specialist agencies and for corresponding innovation initiatives of the DG RWS. However, the impacts of the learning course on the ‘export’ of knowledge to the DG RWS’s innovation programs and specialist agencies have been limited. Only gradually has more attention been paid to transferring WINN’s generated (partially external) knowledge. The production, distribution and maintenance of ‘knowledge products’ can be perceived as an impact of the learning course with regard to the knowledge transfer function. The WINN website is one of these knowledge products because it transfers reports, presentations and lessons learned from the master classes. Reflection on the existing processes of knowledge transfer provided in the course stimulated the production of the handbook *Learning-to-Innovate* and contributed to its dissemination. Also, the learning course inspired the professionals to retain the lessons learned from WINN’s own innovation projects from different perspectives and disclose them to a broader audience inside and outside the DG RWS. In addition, the learning course has gradually welcomed a limited number of DG RWS professionals from outside the WINN program, for example, from WnT and the DG RWS’ staff department in an attempt to participate in the reflections and to share the acquired external knowledge. In doing so they conferred about its value for conceiving of and organizing innovation in water management. Moreover, the admittance of non-WINN professionals may have contributed to the program’s internal legitimacy; if more colleagues are aware of WINN’s existence, struggles and progress, perhaps more internal support and resources would be made available.

In some respect the learning course is perceived as a ‘device’ for stimulating knowledge transfer between the WINN professionals involved and between them and other colleagues at the DG RWS, who are in other innovation programs, and at specialist agencies. Based on the foregoing deliberations, this seems only partially the case.

7.10

CLOSING REMARKS AND AN INTRODUCTION TO CHAPTER 8

This chapter extensively described the learning course that was designed for the WINN program and implemented over two-and-a-half years on behalf of the program's professionals. In addition, in this chapter the impacts of the reflection provided in the course on the innovation practice and the processes of knowledge transfer were identified and described through a number of categories.

The following question is: how can we understand and interpret these impacts? This question refers to the second component of the central research question (see Section 2.8). The next chapter elaborates on the interpretation of the impacts of reflection that were achieved in the learning course. For interpreting the impacts of reflection I will make use of the pragmatic concepts that were introduced in Chapter 6: the idea of learning-in-practice and the concept of boundary spanning.

Chapter 8

Reflecting on the Impacts of Reflection through a Relativist/Pragmatist Inquiry

8.1

INTRODUCTION

In the last section of the previous chapter, an attempt was made to answer the first component of the central research question, that is, how to interpret the identified impacts of reflection on innovation practice and knowledge transfer, provided in the learning course. This chapter is devoted to coming up with an answer to the second component of the central research question (see Section 2.9), that is, an interpretation of the impacts of reflection through a relativist/pragmatist inquiry into innovation practice and knowledge transfer.

The impacts of reflection will be interpreted through the theories on learning-in-practice and boundary spanning, that are framed in the relativist/pragmatist tradition, discussed in Sections 6.8 and 6.9.

8.2

EXPLAINING THE IMPACTS OF REFLECTION ON THE INNOVATION PRACTICE: LEARNING-IN-PRACTICE

When looking back at the categories for the impacts on reflection provided by the learning course, we can conclude that there was significant evidence of change in certain aspects of the involved professionals' individual practice. However, there is little evidence for the development of a communal practice of 'going about innovation' that was developed and shared by the professionals as 'a community'. The reflection in the learning course tended to support the exploration and readjustment of the focus and progress of the innovation program. In contrast there was little evidence that the learning course effectively reflected on the development of a collaborative approach to the governance and internal organization of the program. The question here is whether the reflection provided contributed to facilitating

learning-in-practice and pro-actively stimulating the development of a community of practitioners in conceiving innovation. From the work by Orr (1996), Lave and Wenger (1991), Brown and Duguid (1991) and Wenger (1998), learning-in-practice should be ‘visible’ in the following ways:

- The development of non-canonical practice;
- The emergence of storytelling processes;
- The important role of narration;
- The emergence of collective understanding; and,
- The development of ‘a practitioner’s identity’.

These aspects will be examined in the following paragraphs in order to draw a conclusion about whether the reflections provided in the learning course contributed to learning-in-practice or legitimate peripheral participation (cf. Lave & Wenger, 1991).

8.2.1

CANONICAL VERSUS NON-CANONICAL PRACTICE

Before examining the development of a non-canonical practice, we must attempt to describe the canonical practice of conceiving of and organizing innovation at the DG RWS. That this is no easy task can be understood by the following two observations.

First, we can argue that there is no standard, formalized approach to conceiving of and organizing innovation enacted at the DG RWS. There is no canonical innovative practice in place. The previous innovation program, Turning Tide, was active prior to WINN and was perceived as a loose collection of innovative ideas and pilot projects with no substantive coherence and focus. Turning Tide was therefore not appreciated much, and WINN’s initiators began with the intention “of preventing WINN from becoming a second Turning Tide”. They did so by employing a number of standardized tasks that constitute a ‘formal practice’ for conceiving of and organizing innovation (see Section 1.6.4). Roughly organizing innovation should entail a description of the long-term developments for one of the designated innovation themes and the setup and execution of corresponding pilot projects for each theme. This setup should be framed by program management, which orchestrates and facilitates the innovation efforts and connects them with the interests of internal and external stakeholders. This manner of conduct is perceived as WINN’s canonical intentions for the conception and organization of public policy innovation in water management.

Second, the difficulty with the WINN case is that there was no designated canonical practice in place that allowed the eventual emergence of non-canonical practice. The reason for this seems trivial but is crucial: innovation is essentially non-canonical¹. As a consequence,

1 Mind you: as we have seen in Section 5.5.2, canonical practices are the opposite of innovation (cf. Brown & Duguid, 1991). And in Section 4.9.1 the essentially difficult relationship between innovation and the ‘good virtues’ of public policy domain was addressed.

all existing canonical practices in water management could be subjected to innovation, when innovation is understood as ‘developing non-canonical practices’ (see Brown & Duguid’s claim, 1991). But then the question arises: Where to begin? The mere acknowledgment that current existing practices in water management will no longer be viable in the future was the *raison d’être* for WINN².

In Section 4.8.1, I introduced the idea of public policy innovation concerning the conception of an alternative policy regime for operationalizing a policy paradigm shift. And then again, the question arose: Where to begin? WINN dedicated its resources to the objective of developing non-canonical practices in water management. But it was not clear which of the existing practices should be subjected to deliberate innovation by WINN, let alone the question of whether it was possible to know which of them ‘would be up for innovation and which would not’.

The additional difficulty was that WINN had to deliberately innovate canonical practices in a largely canonical institutional context without real power to change them in a non-canonical direction. As one might imagine, the organizational parts of the DG RWS that exist because of these canonical practices, such as the regional agencies, were not likely to welcome initiatives to change them. As a consequence, WINN engaged in a struggle with the canonical practices in water management and their institutions to find, create, or gain ‘maneuvering room’ to develop non-canonical practices. This struggle was complicated by the rather ‘canonical resources’ WINN had to work with. Most WINN professionals remained stationed at their formal work environment at the DG RWS’s specialist agencies and devoted most of their time to formal policy objectives and not to innovation. As a consequence, the formal structures of accountability and authority stayed in tact.

WINN’s program management had no formal authority over most of the professionals involved. Next, the administrative organization and accountability of WINN was similar to the formal departments and policy programs of the DG RWS. This means that WINN had an annual budgetary system, similar to formal policy programs, with no real flexibility.

In addition, the issue of ‘ownership’ of the innovation program was a difficult one. The question of to whom the professionals and WINN’s program management had to be accountable to with regard to the program’s substantive progress and results was not easy to answer. Many different ‘owners’ within the DG RWS tended to have a say in WINN’s focus and progress. We can include the DG RWS’ top-level management, the Direction Team

2 Innovation in water management ‘usually’ follows from changing policy directives of guidelines. When policy directives or standards (e.g. for water quality) change, incremental innovation is ‘automatically’ initiated in order to live up to the change’s directives or standards. An example of the mechanism is the initiation of the policy framework Water Management in the 21st Century (commonly referred to as WB21). The paradigm shift – from blocking water to reserving space for water – resulted in an endless stream of innovative ideas and even of entire innovation programs, such as Living-with-Water (Leven-met-Water).

of the DG RWS or WINN's program board. These 'owners' tended to supply WINN with different, sometimes even opposing, objectives which made the pursuit of non-canonical practices (i.e. innovation) even more ambiguous. But, perhaps most limiting and abrading for developing non-canonical, innovative practices were the novel organizational objectives, as reported in the DG RWS's business plan (see Section 1.2). These objectives applied to the whole organization and, at least this, was perceived as such by most of the professionals, including at WINN. The objectives served as directives for advancing, perhaps modifying, the existing canonical practices in water management. Attempting to live up to them inevitably limits WINN's ability to develop non-canonical practices that go beyond the prescribed practices. Moreover, innovation objectives became intertwined with the reorganization directives: innovation had to be achieved in line with the new organizational directives, such as 'private sector... unless', 'client-oriented working style' and 'working from the outside to the inside', even when they could be counterproductive to innovation. This line of reasoning indicates the essentially difficult nature of innovation in the public policy domain (see also Section 4.8.2).

8.2.2

STORYTELLING IN WINN

Following Lave and Wenger's account of practice, we can imagine that the practice of conceiving of and organizing innovation in water management will have shown up in stories about the actual experiences with this practice that are shared among the professionals involved. Most of these stories also emerged in the learning course because it seems to be an inseparable part of the WINN program. The storytelling processes that the professionals embarked on in the learning course was specifically about the struggles in their daily practice, described above. There are stories about how to involve other government agencies, such as the DG Water, and private sector firms in the innovation efforts. There are stories about the question of how to deal with the tension between formal policy work and innovation tasks. There are stories of how to connect to the DG RWS' large-scale projects, such as Room for the River, and how to 'supply' its regional directorates with innovative knowledge.

In the following paragraphs I will elaborate on the one story that took up a large portion of the learning course, and that is the story about the substantive focus of WINN that was changed in the second half of the first year of the learning course. This story (see Section 7.5.3) begins with the uncertainty among WINN professionals about which expectations internal and external stakeholders had with regard to innovation in water management. This uncertainty baffled the professionals throughout their efforts to develop new practices, and it centered around the question of how much maneuvering room, or degrees of freedom, they had in conceiving of and organizing innovation. This uncertainty was largely inspired by the perceived poor results of the previous innovation program, Turning Tide, the anticipated reorganization process of the specialist agencies of the DG RWS, and the latest

organizational directives in the DG RWS' Business Plan 2004-2008. For the professionals, these contextual dynamics and their historic legacy obscured the maneuvering room for developing non-canonical practices. Their confusion resulted in questions like "what freedom do we have to go beyond, or even oppose, the existing organizational directives and policy practices to stage innovation?" The struggle for maneuvering room materialized in the legitimacy issue which centered around the question of who legitimizes and sanctions WINN's substantive focus and progress, as well as the outcomes of its concrete innovation projects. It was expected that once the legitimacy issue had been resolved, the room to develop non-canonical practices would be (re-)established, or at least clearly defined. Their expectation was partly fulfilled.

As indicated, the legitimacy issue was more or less resolved by WINN's regained focus after intervention by the DG RWS' top-level management. Looking for a long-term perspective on water management, the professionals perceived they were sanctioned to operate within and even beyond the existing organizational directives and policies. The long-term perspective on water management was reported in the publication *WaterChallenges*³. This publication now served as a guiding framework for identifying future innovation challenges in water management.

A vivid illustration of the scrutiny WINN had to deal with in developing non-canonical practices was the (agitated) discussion with the DG Water that emerged after the publication of *WaterChallenges*. Apparently, the DG Water claimed as their canonical practice the production and publishing of the 'visioning' and policy frameworks for strategic water management⁴, with which WINN, as a program of the executive agency of the ministry, had no business.

The claim for maneuvering room, the subsequent legitimacy issue, and the changed substantive focus can be set down as the subsequent stages of the main storytelling process that was actively developed by the WINN professionals, in which the learning course played a significant role. The storytelling process itself can, in hindsight, be defined as a collaborative process of diagnosis (cf. Brown & Duguid), or a collective process of inquiry (cf. Dewey). The collective storytelling process was sparked by the interference of the DG RWS' top-level management.

3 In Dutch: *WaterUitdagingen*.

4 *Zoals Waterkoers I en II*.

THE 'COLLECTIVE STORY' AT WINN

Early in the learning course, as soon as the second learning session in June 2005 began, professionals spoke of their concern about the lack of maneuvering room they experienced in initiating innovation in the institutional context of WINN. They expressed their feelings of confusion and awkwardness about the matter of appreciation and legitimacy for their innovation work. With the aid of one of the designated masters in that learning session, they discussed possible strategies for ending this confusion about 'which way to go?' The master and professionals conferred on a potential resolution by attempting to identify societal pressures that would induce the DG RWS to act and come up with 'something new': What will be a major challenge for water management that is going to be of current interest to both top-level management and the 'work floor' at the DG RWS?

The WINN professionals' initial concern about their perceived lack of maneuvering room and appreciation for their program coincided with top-level management's concerns about the focus and progress of WINN, articulated during a foreign business trip in which a number of WINN professionals participated.

The internal and external pressures for improving WINN, tapped into the feelings of confusion and awkwardness the professionals had expressed earlier, and it inspired them to take action by initiating a meeting with the DG RWS' top-level management (see Section 7.5.2). The preparation of this meeting and the interpretation of its outcomes contributed considerably to the 'story of WINN'. Both preparation and interpretation were facilitated by the learning course. The actions that followed from the interpreted outcomes, then, were supported by subsequent learning sessions.

When looking back at the 'collective story' the professionals shared, the storyline on maneuvering room, legitimacy and changed substantive focus, it becomes clear that the development of this elaborate, collective story took more than a year. The need for more maneuvering room emerged in the first half of 2005, the legitimacy issue was debated in the second half of that year, in the mean time intensified by the intervention of the DG RWS' management, and the changed substantive focus was elaborated on in the first half of 2006.

By debating and convening over all these matters, each professional 'enrolled' in the process of becoming a practitioner of public policy innovation in water management in the organizational context of the WINN program.

The developed storyline has had significant consequences for the professionals involved. They included these deliberations in their individual practice to achieve their innovation assignment. Those deliberations for the storyline itself may be perceived as collaborative action that is structurally supported by the learning course. In contrast to the usual interaction patterns between professionals, deliberations towards the storyline were largely executed in

dialogues instead of in debate. These dialogues⁵ unfolded during a communal problem analysis ('not enough maneuvering room for innovation') and a collectively conceived problem-solving strategy ('regaining internal and external legitimacy for innovation'). The deliberations among them, as well as their collaborative efforts in preparing and then interpreting the meeting with DG RWS' top-level management, may be perceived as WINN's own 'war story' (cf. Brown & Duguid, 1991). The impact of these deliberations on the program and its professionals is illustrated by the following quote:

Currently everything in WINN is subject to discussion, even our own core team meetings and the consultations with the WINN board and the DG RWS' top-level management. The new assignment is to rearrange the program within six months. And this may have personal consequences because I am convinced that not everyone has the required competences.

The learning course proved its value in providing reflective moments in the making of the story⁶ that was developed, shared and reinvented in a collective effort of bringing the WINN program back on track. Clearly, the storytelling process created collective intentions for communal practice without significantly leading to concerted action. For example, the professionals did not cooperate in carrying out the research to refocus the program's progress. By contrast, the possibility of working together across functional roles within WINN was missed by attracting 'outsiders' to do the work of assessing the long-term perspective on water management issues. As indicated in Section 7.8.7, there is no significant evidence that the professionals agreed on or worked towards a communal practice to conceive of and organize innovative themes and pilot projects. Each professional remained more inclined to 'solistic' behavior than to concerted action.

Their participation in the learning course may be perceived as a story in itself. As previously indicated (see Section 7.9.5), participation was evaluated favorably because it gave the professionals a sense of belonging to WINN as a specific community in the DG RWS. Being part of a two-year experience to gain new insights and participate in collective reflections can be viewed as a vital component of WINN's *history*.

5 As indicated in Section 2.7, I do not refer to actual dialogues between the professionals that have taken place in separate master classes or reflective sessions. The reason for this is that these could not be authorized by the professionals, contrary to the interview reports. The reflection that took place in the learning course should be, in my view, treated confidentially.

6 Of course, the story itself is my retrospective theoretical explanation of the struggles the professionals were engaged in.

8.2.3

THE ROLE OF NARRATION

The role of narration in the learning course was ubiquitous. Virtually all learning dynamics were fueled by narration. Narratives were present in all stages and activities of reflection provided in the learning course. The narratives that developed and were used in the learning course can be perceived as a specific manifestation of what Wells (2007: 245) calls “semiotic mediation”. In the master classes, masters shared their wisdom with the WINN professionals through narratives. The professionals explored the meaning of these ‘wisdoms’ by posing questions, thus revealing (aspects of) their mental framework on which they have grounded their practice and have conveyed through assumptive stories. Of course, the development and use of specific narratives supported the storytelling process in WINN. With regard to the main story – the changed substantive focus – the professionals used specific narratives to convey their stories. They started to use similar words to describe the challenges they faced in turning the program around. To illustrate this I refer to the following phrases that were in collective use when telling the main story: “long-term perspective on societal developments”, “...their consequences for future water management”, “our talk with top-level management”, “the internal and external legitimacy of our innovation efforts”, and “desk study and water challenges”.

The debates between the professionals were an exchange of narratives conveying all concepts of practice (discussed by Cook and Wagenaar, 2003; see Section 5.3.1). In the reflective sessions, the exchange of narratives was deepened with more personal elements, character traits or individual challenges in relation to performing in specific functional roles. By exploring personal challenges in developing one’s own practice through narration, a more profound understanding of the hindrances to change was reached, or at least recognized. The professionals learned to speak each other’s ‘language’, although sometimes only temporarily. On some occasions, even ‘communal’ questions for assessing a specific problem situation, a problem-solving strategy or a collective way of conduct were shared. Some of the professionals involved used these as ‘pet questions’, but after a while they were adopted as their ‘communal language’. It is remarkable that most of these questions referred to the contextual circumstances of the WINN program. Some examples of their questions:

..., but we should now think about which other parties we must involve in this project.

..., but how do you think our top-level management will appreciate this?.

..., and then we need to think of ways for generating some publicity around these outcomes.

Throughout the learning course, narration was the dominant ‘method’ for conveying, sharing, testing, adjusting and processing knowledge. Narration was the driving force behind the conferring and convening among the professionals: exchanges of opinions, experiences and emotions were done by telling stories. Some examples of narration that served as ‘war stories’ (cf. Brown & Duguid, 1991) for the WINN-professionals had to do with:

Perceptions of running innovation projects:

In executing this pilot project [...*name*], I learned that the other actors perceive WINN as [...*image*].

Engagements with representatives of internal and external stakeholders:

I came across [...*colleague X*] and she said that WINN should focus on [...*specific issue*].

New sources of inspiration:

Did you read the report on [...let’s say *climate change*]? I think that we should incorporate the conclusions in that [...*name*] innovation project because I think there’s a societal need for it.

As one can imagine, these war stories served as a collective database of experiences for being active in WINN. Brown and Duguid (1991: 45) call these “repositories of accumulated wisdom”, referring to the collective memory function these stories have. This collective memory served as a means of communication between the professionals involved:

Remember the discussion we had with master X on [...*topic*]? That inspired us to make some adjustments [*such as...*] in our innovation project.

Throughout the reflection in the learning course, narratives were developed, modified and transferred. The processes of development, modification and transfer were instrumental to collaborative problem diagnosis and the exploration of problem-solving strategies. Based on Brown and Duguid’s (1991) account of the role of narration in developing work practices I propose that narratives can take care of the re-enrichment of decontextualized knowledge. This proposition refers to the ability of narratives to translate abstract, generic conceptions, such as innovation and legitimacy, into situated, meaningful terms that address the specific context that WINN and its professionals were engaged in. Through narration, the professionals were able to guide their own personal learnings. By posing questions and debating with the master and their colleagues, they attempted to acquire the knowledge they were searching for.

8.2.4

PRACTICE AS SOCIAL CONSTRUCTION

Orr (1996) depicts practice as social construction along two characteristics: the emergence of collective understanding and the development of the specific personal identity of being a practitioner engaged in a community of practice. Both characteristics are discussed below by describing their manifestation in the learning course.

a. Collective (shared) understanding at WINN

With regard to developing collective understanding, the learning course showed a varied impact. The storytelling process described above indicates a shared understanding of what it took to conceive, organize, and execute innovation by overcoming hindrances in the institutional context of the DG RWS. Shared understanding was developed on the importance of being legitimized to innovate by internal and external stakeholders, on the need to refocus the program, and for the outcome of this ‘refocusing process’: the long-term perspective on water management issues.

The professionals attempted to translate this understanding in their individual practice: they included the legitimacy issue (“which actors will be affected by and hopefully benefit from my innovation project?”) and the long-term focus of their innovation practice (“how does my innovation project contribute to the future challenges in water management?”). Clearly, the learning course did manage to develop a shared understanding of the ‘what-question’: WINN innovations should be about future problem situations in water management that were ‘sanctioned’ (i.e. legitimized), by internal and external stakeholders. However, the course did not significantly contribute to their reaching a shared understanding on the ‘how-question’ and, in this sense, failed to help the professionals become practitioners (see Section 6.8.2).

However, innovation comes in many different varieties and from many diverging directions, making it extremely more difficult for the professionals to find a way to confer and decide on a collective understanding about what to do in which situation. From a more relativist/pragmatist position, we can ask whether this is desirable, although the professionals themselves had expressed in the *ex ante* evaluation and throughout the learning course their need for a ‘more structured and coordinated way’ of innovating (see Section 7.2.3). In any case, the desired structure here translated into a shared understanding of the question “how to organize innovation in a networked policy environment”, and was addressed on an analytical level by the learning course, but did not materialize in concerted action, other than the indication that innovation themes and projects were readjusted to the long-term perspectives. This is, perhaps, partially based on the diverging perceptions of the concept of innovation (see Section 7.2.3) that initially varied from a ‘cognitive, uncentered assignment’ (“it is my responsibility to invent...[*an innovative solution for a problematic situation*]”) to a ‘multicentered process of co-creation’ (“my job is to mediate and guide the creative process

between network actors in a collaborative effort of inventing... [*an innovative solution for a problematic situation*]”). Over time, the latter proposition tended to gain more support among the professionals but this did not immediately result in a communal practice.

We might conclude that the impact of the course’s reflections on the development of collective or shared understanding tended to center around ‘goal seeking’ (cf. Ackoff, 1971) and not on ‘implementation of conceived goals’. And, this unquestionably refers to the process of sense-making (cf. Weick et al., 2005).

b. Personal identity of being a practitioner at WINN

One of the most significant impacts of the learning course is that it supported the emergence of a sense of personal identity for each WINN professional. Perhaps the learning course could even be perceived as the instigator for an emerging WINN identity. As some professionals indicated in the evaluative interviews:

Participating in the learning course gives me the feeling of being part of WINN.

This feeling tended to represent what it was to be a member of WINN. In this sense, the learning course showed evidence of its ability to be a sign of the participants’ involvement in becoming a member. Next to one’s personal identity as a ‘WINN member’, the learning course contributed to their awareness that the identified functional roles were inevitably inclined to develop their own sub-identity, based on their specific experiences, stories and social environments.

Thus, in addition to identity as a WINN member, the course simultaneously sparked the development of ‘sub-identities’. The course exposed their differences in perceptions about innovation between program management and theme leaders by bringing the diverging realities in which they had to perform to the forefront. The identities that were articulated apparently related to the existing organization frames at WINN. These were visible in the established functional roles and subsequent envisaged practices (see Sections 1.6.3 and 1.6.4).

This was perhaps even more sharply illustrated through the involvement of the pilot-project managers in the 2006 learning course. Their ‘isolated’ position to WINN’s core team, partly a result of their specific role in ‘getting one single innovation project done’, was brought about vividly in the learning course. Some of them indicated that they could only remotely relate to the WINN community:

I do not have much to do with the objectives of the WINN program, I get the budget and I know when to hand in the deliverables and that’s it for me.

Participation in the learning course created the emergence of ‘a learner’ identity, in the sense that, over time, a communal manner of conduct during the course was established.

As indicated in Section 7.8.4, the professionals came to perceive and appreciate the learning course as a means to stay connected, to reflect on individual tasks and activities and on the substantive progress of WINN, and through the learning course they gained inspiration for future activities on both the individual and collective levels. In hindsight, this perception and appreciation resulted in predictable ‘classroom behavior’ that never fundamentally changed throughout the course.

8.2.5

THE LEARNING COURSE AS DRIVER FOR LEGITIMATE PERIPHERAL PARTICIPATION?

Can we draw the conclusion that the reflection provided in the learning course led to learning-in-practice, or in other words, did reflection on the evolving innovation practice foster the emergence of legitimate peripheral participation? This question can be answered by examining whether the learning course:

1. Stimulated the formation of a community and adjacent identities of community members;
2. Enculturated the participating professionals to function in this community, in the sense that they ‘acquired’ the community’s subjective viewpoint and learned to speak its language.

The formation of a community and the changes in constituent personalities suggest the process of becoming a practitioner. This is captured by the question: to what extent did reflection in the learning course contribute to the professionals’ basis for becoming a practitioner in conceiving of and organizing water management innovation? As indicated earlier, there is no actual (canonical) practice for ‘doing innovation’ in water management. Thus, the learning course’s contribution to this effort of developing such a practice can be described as an important impact. Such a practice could only be achieved by struggling to overcome multiple challenges, cited in the *ex ante* evaluation (Section 7.2.3).

Struggling with these challenges for public policy innovation in the institutional context of the DG RWS seems to be the main dynamic for becoming a practitioner in WINN. Engaging in the storytelling process, as described earlier, pinpoints the process of becoming a practitioner. Debating about and trying to come together on how to achieve maneuvering room, legitimacy and, subsequently, an alternative substantive focus, engaged each professional in the process of becoming a practitioner. Each component of the unfolding communal story, seamlessly applied to one’s own innovation tasks, leading to the dilemmas that were expressed in the interviews:

How can I create maneuvering room for trying something new, in relation to the formal practices in water management?

How can I ensure the legitimacy of the new practices I'm trying to conceive of?

And:

How can I incorporate (the) long-term perspective(s) on societal developments and their consequences for water management in the running innovation projects?

By trying to collectively figure out how to deal with with these dilemmas for both individual pilot projects and programmatic progress, the professionals became practitioners. Becoming an insider implies that the professionals initially functioned at the periphery of an actual community and gradually learned to function in it through participation in its practice. The question here is what impact the reflection in the learning course had on their becoming insiders in the WINN community. In hindsight, the conclusion is justified that the reflective efforts had a significant impact on the professionals' abilities to become insiders in WINN.

The significance of becoming an insider is expressed in the acceptance that dealing with the struggles of conceiving of and organizing innovation at the DG RWS is an essential part of becoming a practitioner in WINN. Becoming an insider opens up a 'collective sphere' in which the commitments that are required for being a practitioner of public policy innovation in water management can be engaged, debated and reflected on. The learning course contributed to the development of such a collective sphere and to the revelation of these commitments⁷. These contributions are reasoned through the following arguments. First and foremost, the participation in the learning course itself was perceived as significant evidence of their participation in WINN, thus reaching a sense of 'belonging' to a designated community of innovators within the DG RWS. Questions arising from their engagement in the continuous, sometimes emotional debates on the intricacies of conceiving of and organizing innovation in water management are seen in the following:

Who must I involve in my pilot project or with my innovation theme, and in what stage?,

What must I aim for and with what purpose?

How and to whom should I communicate about what I am doing?

And:

7 In the first year of the learning course, two theme leaders abandoned WINN. Some of their colleagues thought that this was partially induced by the learning course because it had revealed that being a practitioner in WINN required specific skills and competences that these professionals were unable to provide.

What should I/we expect from colleagues and stakeholders?

By debating these questions, they got immersed in a self-initiated, ongoing process of being involved in WINN's fate and thus of becoming an insider. However, these 'lively' debates on how to deal with their questions led to some 'side effects', which are elaborated on in the next point about becoming an insider. Some of the participating professionals came to realize, partly invoked by reflections in the learning course, that they did not feel at ease with the WINN program and its objectives. After a few months, they abandoned their membership at WINN. The ongoing struggle with the aforementioned challenges, as well as the uncertainty and volatility of innovation work, proved to be an unfavorable environment for them. However, over time, a few newcomers (e.g. replacements for the professionals who left) were 'enculturated' (cf. Brown, et al., 1989) through the efforts of reflection during the learning course and were brought up to date with WINN's idiosyncrasies. Next, as indicated earlier, the learning course was opened to a limited number of non-WINN participants, those mainly from the corresponding innovation program WnT and the DG RWS' staff department. It was observed that these 'guests' could easily relate and contribute to the deliberations on the challenges to conceiving of and organizing innovation at the DG RWS. The extent to which they could endorse the outcomes, however, remained uncertain, because these professionals were not included in the evaluatory interviews.

Summarizing the impact of the learning course on the individual and communal practices can be captured by acknowledging that the challenge here was the development of non-canonical practices for conceiving of and organizing innovation in water management (see also the *ex ante* evaluation's topics for reflection, in Section 7.2.3). The learning course supported the development of these non-canonical practices of individual professionals but, contrary to what I expected, did not seem to be as effective for developing a (more) communal practice in conceiving of and organizing innovation. The development of a (more) communal practice got stuck at 'good intentions' but did not materialize in concerted action for pursuing the new programmatic objective. The actual emergence of a communal practice about innovation didn't happen. In hindsight, the absence of a communal practice may have the following, sometimes minor, reasons:

- My observations are too close to the process of community formation to identify the development of a communal practice. The developed learnings need some 'incubation time' before materializing in action, and time was too short to fully monitor the eventual development of a communal practice.
- The organizational setting of the WINN program and its institutional embeddedness in the DG RWS did not allow for communal practice to occur or be appreciated. There seemed to be little encouragement for the formation of a community of practice because of the perceived, though absent, need to 'practice together'. The professionals seemed to

experience more incentives for practicing individually than collectively. As indicated in Section 1.6.5, the cultural preconditions for communal practices in public policy innovation in water management were poor. In addition, the absent necessity of working together on objectives and tasks that could, in my view, have easily been perceived as ‘collective’, severely hindered the development of communal practice. In this sense, the WINN program remained a community of practitioners rather than a community of practice (cf. Elkjaer, 1999).

- Next to these contextual ‘hindrances’, the design and implementation of the learning course itself may have been inappropriate for developing a communal practice. Although the intentions for communal practice were present (e.g. acknowledgment of the need for concerted action in regaining the program’s legitimacy by refocusing its substantive progress), these did not materialize in coordinated, collaborative actions. The learning course may not have been an appropriate approach for facilitating the development or emergence of a communal practice among WINN professionals. The learning course might have been more ‘educational or instructive’ than it was intended to be.
- Perhaps learning-in-practice cannot be initiated deliberately by intervening in this practice but can only be analyzed and understood in retrospect (see Lave & Wenger, 1991; Brown & Duguid, 1991). In contrast, however, Wenger (1998) theorized on a more proactive, prescriptive, and therefore differentiated approach to communities of practice and legitimate peripheral participation by claiming that these communities could be actively formed and nurtured. And, as a consequence, it would be possible to actually facilitate learning-in-practice (see Section 6.8.4). The developed storyline about maneuvering room, legitimacy and finding a new substantive focus for WINN indicated that learning-in-practice actually can be pro-actively guided, even though the organizational conditions are not particularly favorable (see Wenger’s account of organizational traits that favor the emergence of communities of practice, Section 6.8.4).

These last two observations refer to the central research question of this thesis (see Section 1.7) and are examined further in the next section.

8.2.6

EXPLAINING THE LEARNING COURSE’S IMPACT ON ‘LEARNING-IN-PRACTICE’

Although a significant communal practice was not developed, we can safely argue that the reflections in the learning course facilitated the development of individual practices by making effective use of the social environment constructed by the entire group of professionals. The professionals adapted and changed their practices through the learning course in a dialectical process with each other. I presupposed that the professionals would engage in learning through participatory reflections on their evolving practice, conferring on and coordinating their efforts. I thought that the course would elicit communal aspects in their

individual practices and would step up the professionals' inclination to develop a communal practice to conceive of and organize innovation. Instead of merging their practice into a communal approach to innovation, the participating professionals 'used' the learning course to advance their own individual practices. It appears that the impact of reflection may have had an essentially individual nature that did not easily become manifest on the collective plane. Nonetheless, the assessment of the interviews with the WINN professionals on this matter indicates that there was a certain shared pattern along which the changes in the aspects of their individual practice evolved (see Sections 7.5.3 and 7.8.3).

A potential explanation for a more significant impact of the reflections on the individual over the collective plane may be found in the 'instructive nature' the learning course seemed to have. Instruction cannot be explained by the concept of legitimate peripheral participation. The instructive function may well be more decisive than the practice-oriented objectives, leading to a different type of learning. This inclines me to consider an alternative theory to explain the learning course's impact. I propose to take Vygotsky's concept of zone of proximal development (1935; 1978) into account. The alternative explanation of the learning course's impact is discussed in the section below through an alternation of theoretical presuppositions based on Vygotsky (1978, 1981, 1987) and Wells (1999), and their manifestation in WINN's learning course. By exploring the concept of the zone of proximal development, learning through reflection on practice enters the domain of learning through 'instruction'. The 'instructive' nature of the learning course appeared to be an unexpected, yet vital feature of the efforts in providing reflection on the question of how to develop a practice of public policy innovation in water management at the DG RWS.

8.3

AN INTRODUCTION TO VYGOTSKY'S ZONE OF PROXIMAL DEVELOPMENT

Lev Vygotsky⁸ was a Russian psychologist who published extensive theories on cognitive development, in particular on the relationship between language and thinking. His theories emphasized the importance of historical, cultural and social factors in cognition. He claimed that language was the most important symbolic tool provided by society. Vygotsky's theories mainly refer to children when explaining the process of development and learning. He shares similar thoughts on the development of children with Jean Piaget. Both scholars explained this process by examining the influence of both physical and social environments on the developing child. For the sake of broadening the relevance of Vygotsky's theory to

8 Vygotsky died in 1934 at the age of 37. His extensive work was translated (into English) and edited almost half-century after its conception and is still being explored.

other potential target groups, I propose to replace ‘child’ or ‘student’ with ‘*learner*’. As we know from the case study described in Chapter 7, the learner is an innovation professional at the WINN program of the DG RWS. These modifications are applied to quotes from Vygotsky and Wells in the paragraphs below.

Vygotsky (1978: 86) defined the zone of proximal development as

The distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under *adult*⁹ guidance or in collaboration with more capable peers.

Gordon Wells, who has been engaged in a substantial exegesis of Vygotsky’s works, interpreted this definition as follows: “It is the zone defined by the difference between the learner’s performance under two conditions: with or without assistance” (Wells, 1999: 313). He (Ibid., p. 318) argues that the instructive nature of the zone of proximal development often leads to the following assumptions about its design

Not only is it assumed that the zpd is more appropriate to individual than to collective development, but, more importantly, it is treated as an attribute, not of the student [i.e. *learner*] alone, but of the student [*learner*] in relation to the specifics of a particular setting. This means that the zpd is created in the interaction between the [*learner*] and the co-participants in an activity, including the available tools and selected practices, and depends on the nature and quality of that interaction as much as the upper limit of the learner’s capability.

This indicates that the zone of proximal development presupposes that learning takes place in a collectively setting which provides interactions between the teacher and the learners and among the learners themselves. Wells advocates that

A corollary of this view is that ...the teacher always has to be responsive to the students’ [i.e. *learners*]’ goals, as these emerge in the course of activity, and by collaborating with them in the achievement of their individual goals, to enable them to extend their mastery and at the same time their potential for further development. From a teacher’s perspective, therefore, one is always aiming for a moving target.

This means that the ‘teacher’ is capable of assessing and addressing the learners’ needs by ‘changing the instructions’. Wells continues Vygotsky’s explanation by referring to his thoughts on the teacher-learner interaction. According to Vygotsky (1987: 215-216):

9 In this case, adult is interpreted as ‘teacher’ or ‘trainer’.

The teacher, working with the school child (i.e. *learner*) on a given question, explains, informs, inquires, corrects, and forces the [*learner*] to explain himself. All this work on concepts, the entire process of their formation, is worked out by the [*learner*] in collaboration with the adult (i.e. *teacher*) in instruction. Now, when a [*learner*] solves a problem, (s)he must make independent use of the results of that earlier collaboration.

Manifestation in the learning course

The concept of zone of proximal development refers to the difference in the learner's development under two conditions: with and without assistance. Of course, there was no 'laboratory situation' possible in WINN's learning course, in the sense that a division could be made between an experimental group and a control group in order to 'test and measure' the impact of reflection in the learning course by comparing the development of the two groups. Nevertheless, the zone of proximal development refers strongly to the designated function and impact of the learning course. With assistance provided by masters, as well as by facilitating researchers and their colleagues, the participating professionals were offered an opportunity to develop and learn. However, the instructive nature of the learning course, manifested in the teacher-learner interaction, seems to have had a more decisive impact on their learning than I had expected. The instructive nature of the learning course can be found in its impact on the personal knowledge and experiences that were, on many occasions, recognized, acknowledged and transferred, sometimes even literally, into the professionals' individual practice. The impact of the masters' instructions on the development of the storyline was even more considerable: during the learning course the maneuvering room, legitimacy issue and changed substantive focus were examined and debated with the designated masters, and potential actions were simulated and assessed with their help.

These contributions were largely requested by the professionals themselves. The theme leader Forum Ervarum as contact person on behalf of the client organization and embedded researcher conferred on the actual and relevant needs for reflection prior to each learning session. For this reflection they used the outcomes of the evaluations¹⁰, but mainly relied on the pragmatic needs that came up during formal core team meetings, in informal talks on the work floor and, perhaps most importantly, during engagements with 'high-level policy officials' of the DG RWS and the DG Water. In this way, a deliberative attempt was made to design the learning course to address the actual and specific zone of proximal development of the professionals and their individual and collective challenges. Thus, the zone of proximal development was largely identified by the professionals themselves, with help from me as embedded researcher, and changed continually during the learning course's implementation. Lastly, 'teacher' is a pluriform concept in the learning course. The masters can be perceived as teachers, and so can the embedded researcher. But as Wells indicates, the

10 *Ex ante* evaluation in 2004 and *ex durante* evaluation in 2005.

co-working professionals can function as teachers for their colleagues as well. In addition, the pedagogic concept of the combined master class/reflective session can be perceived as ‘a teaching’ setting, as it induces the professionals to what can be called ‘class room behavior’, as described earlier.

8.3.1

THE PERSPECTIVE ON INSTRUCTION

Vygotsky’s initial thoughts about the zone of proximal development have developed over time. Wells (1999: 314) interprets this advancement in Vygotsky’s theory by pointing to an increased emphasis on instruction and its role “in relation to the development of those higher mental functions that are characterized by conscious awareness and volition”. According to Vygotsky (1987: 212) “Instruction is only useful when it moves ahead of development, leading the [*learner*] to carry out activities that force him to rise above himself”. The zone is relevant for identifying the opportunity for instruction, as Vygotsky (Ibid.) indicates: “Instruction is maximally productive when it occurs at a certain point in the zone of proximal development”. This stance seems to perceive instruction as ‘value free’, or as Wells (1999: 317) indicates: “Vygotsky does not treat the nature of instruction itself as problematic”.

Wells takes note of Vygotsky’s lack of specificity about the nature of instruction in his discussion of the concept. This lack of clarity has led to different approaches to instruction, and one crucial difference is the role that students play in shaping the objectives of learning activities. Wells (1999: 318) proposes an approach that

places much greater emphasis on the importance of educational activities being meaningful and relevant to students at the time they engage in them. Adopting this approach involves the teacher in negotiating the curriculum and in accepting that the most valuable learning opportunities are often those that emerge when [*learners*] are encouraged to share the initiative in deciding which aspects of a class topic they wish to focus on and how they intend to do so.

Manifestation in the learning course

As one might expect I wholeheartedly embrace Wells’s pragmatic suggestion about sharing the initiative on what to learn with the learners involved. The identified topics for reflection, that were gotten from the professionals through an *ex ante* evaluation of their needs for learning, could be described as an attempt to identify their own potential zone of proximal development. Figuring out their perceived needs for learning means figuring out the development they are inclined to embark on in the learning course. What are their suggestions for defining the teachers’, meaning embedded researcher’s and masters’, substantial contributions and modes of instruction?

Obviously, it is easy to enter into a lengthy discussion about the question of what influence instruction has on the development of the learners involved and whether this influence is

desirable or not. Hence, I suggest bringing the relativist/pragmatist perspective and action-science approach to this study back to the forefront by claiming that any instruction that resides in a self-defined and evolving zone of proximal development is adequate instruction for the learners who have been involved in defining it. There is no way of knowing beforehand or from a distant position what the appropriate instruction should be for all learners involved. What can be known is what they themselves perceive as necessary for their development as individuals, and as a collective of individuals. As indicated earlier, the professionals themselves often ‘instructed’ the embedded researcher on their wishes and requirements for the upcoming learning session(s) (see Section 2.5.2). Perhaps this means that the concept of the zone of proximal development is more valuable for explaining the process of development and not so for the ‘substance of this development’. The potential learning needs, that is the group’s potential zone of proximal development, must then be *ex ante* evaluated before engaging in the actual instruction, preferably with the aid of the learners involved.

8.2.3

THE CONCEPT OF INTERNALIZATION

The concept of internalization plays an important role in Vygotsky’s theory on development and learning. This concept is also expressed in many haphazard thoughts on learning that claim that knowledge is found outside us (in books, online, in databases or with experts) and after carefully processing it, we will be able to master and use it ourselves. Wells (1999: 319) claims that the development of higher mental functions, as indicated by Vygotsky, is mainly achieved “through the construction of the intramental plane of discourse practices that are first encountered on the intermental plane of activity-related social interaction”. Or to put it in a Vygotskian one-liner: “All higher mental functions are internalized social relationships” (1981: 164). The relationship between intrapersonal and interpersonal processes is also cornered by Leon’tev (1981: 56) who claims that:

Higher psychological processes unique to humans can be acquired only through interaction with others, that is, through inter-psychological processes that only later will begin to be carried out independently by the individual. When this happens, some of these processes lose their initial, external form and are converted into intra-psychological processes.

Based on these thoughts we might conclude that Vygotsky provides a sharp distinction between internal and external processes of learning and development, and between social (intermental) and individual (intramental) functioning. If the concept of internalization is relevant, if only on an analytical level, externalization must be relevant as well, being its pendant. However, Vygotsky’s thoughts on processes of internalization and externalization tend to contrast sharply with the concept of legitimate peripheral participation (Lave & Wenger, 1991) which has been developed for explaining learning-in-practice. Legitimate peripheral

participation renounces internalization as being a ‘universal process’, claiming that learning cannot be detached from its context and history. When we accept participation as the core of learning, it can be neither fully internalized as knowledge structures nor fully externalized as instrumental artefacts or overarching activity structures. “Participation is always based on situated negotiation and renegotiation of meaning in the world” (Ibid., p. 51).

The apparent contradiction between Vygotsky’s zone of proximal development and Lave and Wenger’s concept of legitimate peripheral participation is a serious issue for this thesis. In Chapter 6, I argued that learning is fostered and known through participation-in-practice, accepting that the internal and individual plane (the practitioner) and the external and social plane (the practice) cannot be convincingly separated because they are mutually shaping each other as they evolve. This seems to contrast with Vygotsky’s assumptions. Fortunately, Wells addressed this contradiction eloquently through the following reasoning. Vygotsky’s ideas can be discussed by considering the distinction between the social and individual dimensions of the process of learning and development, as well as through its temporal sequence. Following Vygotsky, Wells (1999: 321) claims that

Higher mental functions are first social and external, in the sense that they are already implicated in ongoing social activity before any particular individual enters into the activity and gradually becomes able to organize his or her participation in terms of an individual construction of the relevant cultural practices.

This process can be understood by the concept of internalization. Next, Vygotsky proposes to accept a temporal sequence at the individual level: in learning there is a stage during which the higher mental functions are external to the learner and a subsequent stage during which they are internal. This implies that, at some point, learnings pass from “outside to inside the skin of the learner” (Wells, 1999: 322). For many scholars, this is an unacceptable perspective. But according to Wells (1999: 322, cf. Rogoff, 1990), these scholars seem to forget that “at every stage, the learner is necessarily a participant in, and therefore a part of the community whose practice he/she is learning”. In other words, the ongoing activity can be seen either from “the perspective of the individual participants acting with mediational means, or from that of the social practices in which they and the mediational means are involved” (Wells, 1999: 322; cf. Wertsch et al., 1995). Wells advocates that the value of the zone of proximal development is that it enables us to work with the internal and external perspective on developing and learning simultaneously. With this viewpoint, he tends to bridge the gap between Vygotsky’s zone of proximal development and Lave and Wenger’s legitimate peripheral participation. This is perhaps more adequately captured by Wells’s (1999: 322) suggestion that

on the one hand, the reciprocity with which the participants adjust their manner of participation to take account of each other's current levels of knowledge and skill in carrying out the activity and, on the other, the transformation that takes place in the process, in their individual potential for participation. It is also important to add that, as a result of the ways in which new participants take part, both purposes and means of joint action are themselves constantly undergoing transformation.

In my view, accepting the analytical categories of internalization and externalization to understand the processes of development and learning refer to the value of 'detaching practice from the practitioner'. These categories help us in analyzing what is going on in these 'intertwined mental processes'. It is difficult to determine when the internal (the practitioner) ends and the external (the practice) begins and vice versa. I propose to take the concept of reflection into account to capture the process in which external, social learnings become internalized and lined up for practice.

In my opinion reflection has everything to do with the process of development and learning-in-practice. It can take place during, after and before practice, but in any stage, practitioners challenge the mental models and assumptions with which they act. Reflection-in-practice or reflective practice (cf. Schön, 1983) can be seen as a process of inquiry (cf. Dewey) that becomes manifest on both the individual and collective planes. I argue that reflection may be perceived as a mediating, analytical category for understanding the stage in which external (semiotic) artefacts become 'tested and processed' by the individual learner, be it by accepting or rejecting them. Reflection thus refers to the 'incubation process' between the manifestation of external (semiotic) artefacts and the internal processing of these artefacts, lining them up for 'casual application'. Critical reflection means engaging in a continuous process of asking why and how, in an attempt to overcome the dissonance between external (semiotic) artefacts and our internal mental models. This refers to the mediating function of reflection between the analytical categories of internalization and externalization.

Manifestation in the learning course

The process of internalization seems to elucidate precisely the differences in impacts of the learning course at the individual and collective levels. Perhaps because of the internalization process, it proved to be difficult to find a common ground for convening a communal practice to conceive of and organize innovation. Apparently, the absence of the (perceived) need to 'practice together' made this superfluous. However, the re-externalization of internalized external knowledge did seem to take place in one expression of communal practice the professionals actually shared: the development of the substantive focus and progress, represented by the storytelling process.

The interaction processes in the learning course 'produced' an externalized 'collection of knowledge' that 'hovered over' the group of professionals, waiting to be seized and trans-

ferred into practice. The externalized collection of knowledge originated from the masters' contributions, the professionals' responses to them, and from contributions by the professionals themselves. All those present in the learning course transferred and shared knowledge. Each of the professionals internalized the 'external' knowledge differently by matching it to his/her own mental models. This internalization process became manifest in the different learnings the professionals perceived from one specific event in the learning course. Different aspects were highlighted and diverging interpretations were made of the same event. And the learning course itself had become a fluid, continuously evolving collection of knowledge to which all participants (professionals, masters, and embedded researcher) could relate to, refer to, draw from and add to.

The internalization-externalization process does not occur overnight. When looking back at the 'collective story' the professionals shared, the storyline on maneuvering room, legitimacy and changed substantive focus, it becomes clear that the development of this story took more than a year. The need for more maneuvering room emerged in the first half of 2005. The legitimacy issue was debated in the second half of that year, in the mean time intensified by the intervention of the DG RWS' top-level management (see Section 7.5.2), and the changed focus was conceived in the first half of 2006. As indicated, the contents of this story were shaped both inside and outside of the learning course.

Reflection, therefore, played an important role in the process of developing and learning in the WINN program. In hindsight, reflection contributed significantly to changing certain aspects of individual practices of innovation. The learning course convincingly conveyed the importance of reflection because it enabled the professionals to examine, value and process knowledge that 'emerged in them and around them', inducing them to change 'their ways of going about innovation'.

On the collective level, reflection in the learning course functioned as a means for connecting WINN to 'the world outside'(e.g. to the dynamics in the institutional context of WINN), due to the reorganization process that the specialist agencies of the DG RWS were about to engage in. In the course, reflection seemed to facilitate the dynamics of internalization and externalization on both individual and collective levels by continually asking 'why' and 'how' (cf. Preskill & Torres, 1999).

In hindsight, the learning course's contribution was indeed nothing more than providing the means to reflect to a predominantly non-reflective community of practitioners. The non-reflective nature of this community follows the perceived traits of the DG RWS' organizational culture (see Section 1.6.5). With this I do not mean to say that there was no reflective mechanism in place in the WINN community, but merely that the learning course facilitated reflection on a regular, structured basis, with the aid of 'knowledgeable experts'.

8.3.3

THE ROLE OF THE 'SIGNIFICANT OTHER' IN LEARNING-IN-PRACTICE

As indicated earlier, the concept of the zone of proximal development assumes that the development of the learner involves 'a more expert person or a capable peer' who participates with him/her in practice. 'Capable peers' are not restricted to specific individuals or role models, as Vygotsky (1978: 90) states: "Learning awakens a variety of internal development processes that are able to operate only when the child [i.e. *the learner*] is interacting with people in his environment and in cooperation with his peers". This cooperative perspective on learning can be attributed to Vygotsky's and Piaget's advocacy for peer group activities in fostering reflection and learning.

The required expertise for stimulating development and learning does not necessarily have to come from one "significant other" (Wells, 1999: 323) who, in all respects, outmatches the others¹¹. Through cooperation, the group as a whole can mobilize the expertise that stimulates each group member "to rise above himself" (Vygotsky, 1987: 213). By combining the contributions of individual members, the group will be capable of problem-solving that exceeds the individual's capacity. Wells (1999: 324) continues by stating that "It seems, therefore, for learning to occur in the zone of proximal development, it is not so much a more capable other that is required as a willingness on the part of all participants to learn with and from each other". The relevance of the significant other and its function for allowing learners to rise above themselves in situations of group practice is accurately captured through Wells's (Ibid.) following statement:

...the group as a whole, by working at the problem together, is able to construct a solution¹² that none could have achieved alone. In other words, each is "forced to rise above himself" and, by building on the contributions of its individual members, the group collectively constructs an outcome that no single member envisaged at the outset of the collaboration.

It is not hard to imagine that reflection can play a vital role in helping groups and their participants rise above themselves. This will be illustrated in the next section.

Manifestation in the learning course

Although the reflections that were triggered by the learning course had most of their significance at the individual level, this does not mean that reflection was only present on that level. On the contrary, the reflections and subsequent learning are the result of reflections that arose from interactions with many 'significant others', active in the learning course: the masters, the WINN colleagues, and the embedded researcher. Perhaps the masters were the

11 The idea of 'the significant other' tends to refer to Polanyi's (1962) theory on master-apprentice learning.

12 Or an interpretation of a potential solution.

most eye-catching significant others, as they operated as ‘capable peers’ or ‘knowledgeable experts’ for the entire group of professionals in a classroom setting. Here, they shared their knowledge and experiences by employing different artefacts, but mainly through narration on one or more topics for reflection that were identified by the professionals. Also, the masters supported the professionals in reflecting on their lessons by ‘sifting out’ the relevance and applicability for individual and communal practice. More importantly, the master was ‘the human manifestation of the zone of proximal development’: the professionals wanted to be as knowledgeable or capable as the master in organizing innovation, at least with regard to some of the issues that surfaced in the evaluations, thus ‘tempting the professionals to rise above themselves’ (cf. Vygotsky, 1987).

Next to the masters, I, as the embedded researcher, can obviously be seen as a ‘significant other’ by the participating professionals. My role as embedded researcher has been sufficiently described in Section 2.5.1. An additional feature of this role is that the embedded researcher is perceived as a significant other at diverging levels of abstraction, ranging from having the responsibility to assess the topics for reflection, report on the learning impacts of each learning session, make sure that lunch and coffee are served on time, etc.

In hindsight, I must conclude that the most unquestionable ‘significant others’ for each of the professionals were their own colleagues in the WINN program. Both inside and outside the learning course, the WINN professionals interacted, trying to give shape to their own practices, as well as to the progress of the innovation program as a whole. In doing so, they challenged each other’s knowledge, experiences and beliefs, with the potential effect of learning from each other and achieving objectives beyond their individual capacity. Unfortunately, the professionals did not seem to recognize their colleagues explicitly as significant others from whom they might learn. The typical patterns of interaction seemed to obstruct explicit learning from each other. Remember, these interactions were mostly mediated through debate and not dialogue. It is possible that these debates contributed to changes in their individual practices through the process of internalization. However, collective learning-in-practice, that manifests itself in a communal practice, was hard to convert to the reflective debates in the learning course. With one exception: the storytelling process on maneuvering room, legitimacy and changed substantive focus. In hindsight, the collaboratively developed storyline could be perceived as the only ‘real’ reason to begin ‘practicing together’ and thus, for learning from each other. Perhaps the absent necessity ‘for practicing together’ combined with limited opportunities for collaboration, due to part-time assignments to WINN and dispersed work locations, may have been forceful constraints to ‘seeing each other as someone they might learn from’.

Of course, outside the innovation program and its learning course, there were numerous significant others to the WINN professionals that had, undoubtedly, influenced their capacity to develop and learn. However, as I indicated earlier, many of these significant others were representatives of formal practices and institutions in water management (such as the

DG Water, the DG RWS' regional agencies and water boards) who were likely to scrutinize or even hinder innovation. Thus, in the case of the WINN program, 'significant others' in its external context may well be considered capable of obstructing innovation and learning because it may have wanted to maintain canonical practices over the development of non-canonical ones.

8.4

EXPLAINING THE IMPACT OF REFLECTION ON KNOWLEDGE TRANSFER: BOUNDARY SPANNING

In the previous sections, the impact of reflection learning-in-practice was discussed in detail. The next question is, how can we explain the impact of reflection on knowledge transfer? The answer and explanation are provided through the concept of boundary spanning that was introduced in Chapter 6. Based on the case description in Chapter 7, we can conclude that, with regard to knowledge transfer, the reflections in the learning course stimulated exchanges of knowledge between functional roles in the WINN program. In addition, the course seems to have been an effective device for 'importing' external knowledge on a person-to-person basis. Lastly, there are modest signs that the learning course participants were able to transfer 'imported' knowledge from WINN to other professionals and departments in the DG RWS. The transfer of knowledge from WINN to network actors for innovation, however, had not been an objective of the learning course. In Chapter 6, I argued that the concept of boundary spanning puts people back into the heart of knowledge management by acknowledging the role they play in acquiring, applying, sharing, and translating knowledge. Knowledge transfer understood as boundary spanning is further elaborated on in the next paragraphs.

8.4.1

WINN AS BOUNDARY COMMUNITY?

With regard to the boundary spanning processes in WINN and its learning course, the first question I would like to answer is whether WINN can be called a 'boundary community'? With Carlile's (2002), Williams' (2002) and Bechky's (2003) deliberations in mind, we could perceive WINN as 'an intentional boundary community'. According to its objectives (see Section 1.6.1), WINN was intended to conceive of, organize and execute water management innovation that crossed organizational boundaries of the DG RWS by involving private sector firms, knowledge institutes and potential users of innovative concepts and technologies, such as the DG RWS' 'own' regional agencies and water boards. WINN was to function as (serving-)hatch for the DG RWS and the water policy sector as a whole, by transferring and translating (new) knowledge generated by knowledgeable actors to water managing agen-

cies. In addition WINN should articulate the need for (new) knowledge of these agencies and transferring the ‘specifications for innovation’ to ‘knowledge producing’ external actors, such as private sector firms and knowledge institutes. Through functioning as a boundary community for innovation WINN may contribute to the emergence of open innovation (cf. Chesbrough, 2006) in the public policy domain of water management.

One of the most illustrative perspectives on the (potential) capability of functioning as ‘boundary community’ is perhaps Carlile’s (2002: 445-446) pragmatic theory on cross-boundary knowledge transfer, using boundary objects, such as ‘a three-step process’ (see Section 6.9.3): the representation, learning and transformation of knowledge-in-use on either side of the boundaries¹³. Conducting this three-step process in a domain that is dominated by policy guidelines, norms and standards, and legislation is no easy task because the constituting actors thrive on stability, which is also tangible by their knowledge-in-use.

The first step, representation, entails articulation of the knowledge that the interacting actors have in use. If they are able to do so – and this is difficult because of diverging semantics, assumptions and beliefs about the water system, its problems and their potential solutions – actors can then engage in the next step, learning. Learning comprises a comparison of the knowledge-in-use on either side of the boundaries, with the aim of identifying differences and dependencies. It is not hard to imagine that the identification of differences is relatively easy and ‘harmless’ compared to the comprehension *and* acknowledgment of mutual dependencies. Also, public policy actors, such as water managing agencies, might not be pleased with the idea that they depend on knowledge from other actors to decide on and execute water management policies. They tend to be inclined to at least uphold the idea that they decide the policy agenda and not private sector firms, knowledge institutes or interest groups.

But especially in public policy innovation, we see that this idea cannot hold because the aforementioned actors will all try, some with more success than others, to influence or manipulate the policy agenda for water management¹⁴. If actors arrive at acknowledging the dependencies in their knowledge-in-use, they can enter the next step, transformation. Transformation implies the reification and re-interpretation of the knowledge-in-use, if only

13 Knowledge transfer in a multi-actor setting, as is the case in public policy networks, presupposes that more than one boundary has to be overcome.

14 A striking example of this mechanism is the concept of building with nature, conceived by the dredging companies Boskalis and Van Oord, in collaboration with knowledge institutes such as WL/Delft Hydraulics and the Technical University Delft. This concept has been translated and tested in the WINN pilot project Sand Engine (in Dutch: Zandmotor). The outcomes of this pilot have been recently incorporated into the advice of the Delta Commission (issued on September 3, 2008). See: <http://www.wateruitdagingen.nl/pilots/zandmotor/default.aspx> and http://www.verkeerenwaterstaat.nl/Images/Programmaboek%20Buiding%20with%20Nature%20v90_tcm195-212845.pdf, and http://www.deltacommissie.com/doc/advies_samenvatting_en_aanbevelingen.pdf

through a re-combination, and will materialize in new meanings and insights about ‘what is going on?’ New knowledge about (future) problems in the water system and their (potential) solutions will inevitably have consequences for the existing policy regime, its theories, norms and standards and instruments, such as legislation and the distribution of financial resources. And here we see on one side, the close connection between the pragmatic knowledge transfer across organizational boundaries and public policy innovation and, on the other side, the essentially difficult relationship between public policy innovation and the expected ‘good virtues’ of the public policy domain, as discussed in Section 4.9.1.

Many policy actors are not likely to embrace the outcomes of cross-boundary knowledge transfer because it tends to lead to innovation, and innovation ‘threatens’ the existing policy regime. It is clear that frustrating the processes of cross-boundary knowledge transfer seriously hampers the emergence of open innovation in water management through which the new policy regime may come into being. However, policy actors often resort to ‘defensive behaviors’ when being confronted with innovative policy-related initiatives. This could be one of the explanations for the difficult relationship between WINN, as a boundary community of the DG RWS, and the DG Water which, as the policy department in the same ministry (of Public Works, Transportation and Water Management), is caught up in the middle of a transformational process to the new policy regime.

Manifestations in the learning course

The learning course’s contribution to WINN’s (intentional) objective to function as a ‘boundary community’ was to invite knowledgeable experts or capable peers (i.e. the masters), from other ‘actors’ who are experienced in this type of boundary work. Most of the masters invited, whether from private sector firms, knowledge institutes or government agencies, were capable of sharing their wisdom, experiences and ‘cleverness’ with cross-boundary knowledge transfer in innovation projects. The masters showed that it is possible to function as a ‘boundary community’ but, at the same time, that this function is no easy matter. It involves competences that are perhaps not commonly attributed to professionals working for a government agency. It involves qualities that are explained by Williams’ (2002) ideas on competent boundary spanners in networked policy environments. These will be discussed in Section 8.5.2. Next to the masters’ contributions to this, the learning course provided room for discussion and reflection on the difficulties of organizing cross-boundary knowledge transfer, associated with ‘practicing innovation’. Each of the professionals could relate to these difficulties and shared common, recognizable experiences in their attempt to pull this off. Reflection and discussion took place with questions like:

How can we involve our top-level management, including the deputy-minister, in the activities of our innovation program?

What will the DG Water think of this innovation initiative?

How can I attract or convince my colleagues at the DG RWS' specialist and regional agencies, to support this innovative idea?

How do we prevent becoming a 'broker' for the unilateral interests¹⁵ of private sector firms or knowledge institutes?

And:

What is genuinely new about this knowledge and how can it be translated to the regional agencies and water boards?

It is through these questions that WINN professionals assessed the possibilities of acting as a boundary community for conceiving of and organizing innovation in the domain of Dutch water management.

8.5.2

WINN PROFESSIONALS AS BOUNDARY SPANNERS IN A NETWORK(ED) POLICY ENVIRONMENT

For an assessment of this important issue we have to make extensive use of the ideas from Williams (2002) and Carlile (2002). As indicated, WINN as a whole could be perceived as a (serving-)hatch for the DG RWS on knowledge about water management innovation. In line with my proposition that an organization is only capable of knowledge transfer through its workers – in this case professionals of innovation – who actually practice 'knowledge brokering'. These workers can be perceived as individual agents of exchange between the organization and its environment (cf. Leifer & Delbecq, 1978) and as agents of organizational change (cf. Bolan, 1971). They are placed in a position of acting as such, by operating at the periphery or boundary of the DG RWS. They are expected to mediate between the specialist agencies of the DG RWS and their environment, both internal (e.g. the regional agencies) and external (e.g. private sector firms). The peripheral or boundary position is partly induced by the fact that most professionals are recruited from specialist agencies, which have a more remote relationship to the core tasks of the DG RWS, i.e. maintenance of water

15 One of the subversive side effects of innovative knowledge (e.g. developed and launched by private sector firms or knowledge institutes), is that it is always 'guilty of special pleading'. New 'revolutionary' solutions are often meant to secure the future order book of private sector firms or knowledge institutes. On some occasions, launching revolutionary solutions is capable of shaking up the 'stable' policy landscape, forcing politicians and administrators to respond and policy departments, such as the DG Water or the DG Spatial Policy, to tone down the feasibility of these potential innovations.

and road networks and construction of water and road infrastructure (see Section 1.4). As indicated, this remote relationship follows from the specialist agencies' own core tasks, i.e. research and consultancy on behalf of (future) maintenance and construction of water and road networks. In addition, by being a member of WINN, the professionals were granted limited capacity to innovate within the fairly rough and indiscriminate objectives of the innovation program (see Section 1.6). Thus, it is safe to conclude that the WINN professionals were indeed in the position of acting as exchange and change agents. The question here is whether they succeeded in doing so? And if so, what was the contribution of the learning course to this?

These questions bring us back to Williams' thoughts on being a competent boundary spanner in a network(ed) policy environment (see Section 6.9.2). Actually, in retrospect, this might be the key objective of knowledge transfer in the WINN program and perhaps the reflective objective of the learning course. We could even say that the capacity of being a competent boundary spanner is a specific property of a professional's individual practice of innovation. If we look at these capacities, labeled by Williams (2002) as reticulist skills, entrepreneurial and innovative skills, and relational and inter-personal skills, we can identify the impact of the learning course that relates to Williams' ideas of being a competent boundary spanner in a networked policy environment. In other words, I raise the question of whether the reflections provided in the learning course had an impact on the professionals' practice of being 'boundary workers'. I will answer this question below.

Manifestation in the learning course

Reticulist competences include both political skills and competences of connectivity. It may be obvious that these competences relate to the legitimacy issue that came up during the first year of the learning course. The question of how to operate 'adequately politically', avoiding opposition and seizing opportunities, was one of the much discussed issues for reflection throughout the learning course. And it paid off as such: the long-term focus and its subsequent publication *WaterChallenges* were politically sanctioned by the DG RWS' top-level management. Although according to the WINN professionals there was some politically inspired hassle from the quarters of the DG Water when *WaterChallenges* was published.

De Leon's (1996: 508) view that boundary spanners are "catalysts who bring together problems and solutions that otherwise bubble chaotically in the conventional currents of modern policy streams", is perhaps 'a bridge too far' for characterizing the professionals' contribution' to the public policy domain of water management. The contribution of the WINN professionals tended to be more or less remote from the actual policy process. Their contributions concerned public policy innovation, which focuses on providing inspiration for the development of the new policy regime for water management (see Section 1.2.2)

Bringing together problems and solutions took place under influence of the efforts of the WINN professionals, but the actualization of these efforts into policy artefacts lagged behind because this required legitimate access to the policy-making process. And that was not really available, partly caused by the DG Water's reflex to act as 'gate keeper' of the policy process. Perhaps Kingdon's (1984) observation that the capacity of boundary spanners to "open policy windows" is more appropriate for describing the contribution of WINN's professionals to the policy landscape in water management: they put certain potential innovations on the policy agenda¹⁶. The practice of opening policy windows is, of course, executed through rhetorical and action frames¹⁷ which were discussed in Section 4.8.6 and Section 5.5.2.

The matter of competences of connectivity had been identified by the professionals from the start on. The *ex ante* evaluation showed evidence of concerns in this direction, as it was expressed by the professionals themselves as a topic for reflection. This topic was present throughout the entire learning course. As indicated in Section 3.9, learning to establish connections was perceived to be essential for the adequate functioning of a networked policy environment. Conceiving of and organizing innovation in the complex environment such as the Dutch water management domain tends to have a close relationship with network management (cf. Klijn, 1996). A way to establish meaningful connections is provided by the pragmatic processes of knowledge transfer. Representation, comparison and transformation of existing knowledge among network actors may contribute to the establishment of (new) connections between network actors who have acknowledged that they need each other's knowledge and experiences to 'get the innovation job done'. Acting as knowledge broker between policy network actors was one of the recurring issues in the masters' presentations. Many of them mentioned the process of 'going back and forth' between network actors and their knowledge-in-use in order to establish something new, an activity that Trevillion (1991) referred to as 'cultural brokering'.

The entrepreneurial and innovative skills of the WINN professionals may have been expected to have 'a certain given quality' that didn't need to be developed further. However, these skills imply a doing, next to thinking and talking. And doing tends to be a whole new ball game to most of the professionals because their main skill, as a member of a specialist agency, seems to be thinking and studying. Doing implies trial and error, especially in in-

16 For example, innovative pilot projects on using sediment as construction and building material, techniques for strengthening existing river levees and techniques for making effective use of natural sea currents for improving coastal defence.

17 Examples of the rhetorical frame are the debates about innovation initiatives in media appearances and innovation events, such as de Dag van Maarssen, November 2005 and 2007. Examples of the action frames are of course various innovative pilot projects in which new concepts of techniques are actually tested, e.g. de IJkdijk, www.ijkdijk.nl.

novation work. Leadbeater and Goss (1998: 15) indicate that these skills require “creative, lateral thinking rule-breakers who frequently combine a capacity for visionary thinking with an appetite for opportunism”. This refers to the ability to combine doing and thinking. Many of the masters in the learning course were thoroughly questioned on the ‘doing part’ of being an entrepreneurial innovator. Their experiences with getting the innovation job done seemed to be more meaningful than the (theoretical) assumptions with which they worked.

The relational and interpersonal skills have a close relationship with the competences of connectivity. This implies the competency of ‘empathy’: To what extent is an innovating professional capable and willing to acknowledge and accommodate the interests of other actors in his/her innovation initiatives? This proved to be a difficult question. The professionals were burdened with all kinds of DG RWS-related ‘instructions’ on how to conduct and direct their innovation efforts (see Section 1.5.1). WINN is expected to accommodate the core tasks of the DG RWS and must incorporate the DG RWS’ desire to be ‘the most service-friendly government agency’. In addition, WINN must be the DG RWS’ innovation program exclusively and not available to other water managing authorities. But in contrast, the DG RWS should strengthen the competitive position of the Dutch private sector¹⁸ by developing new water managing infrastructures that can be sold abroad by private sector firms. Ergo, the professionals tend to be swamped with formal guidelines and organizational objectives for their innovations; each of them could be perceived as being part of the (newly) prescribed canonical practices (cf. Orr, 1996) of the DG RWS.

Innovation is often used as device to renew existing policy frameworks that have gotten stuck in their own mechanisms and routines. In this respect, public policy innovation may be perceived as an attempt to escape the tendencies of reflexive modernization (cf. Beck, Lash & Giddens, 1984) that many policy fields, including water management, tend to suffer from¹⁹. And yet, the WINN professionals that have to achieve public policy innovation in water management are also burdened with all kinds of constraints that limit their ‘maneuvering room’. When we add the common image of the DG RWS as another actor, often referred to as ‘the state within the state’ (see Section 1.7), we can see that the required skills are very hard to impose on the professionals. And if they were capable of acquiring *and* implementing them, they were not expected to be appreciated for them because the outcomes were likely to contradict the ‘canonical realities’ around them.

18 Ten tijde van de case study 2004-2006 is het ondersteunen van de BV Nederland blijkbaar een beleidsdoelstelling van het ministerie van Verkeer & Waterstaat. Het beleid dient ‘EZ-volgend’ zijn.

19 The implementation of the European Water Framework Directive is a good example of this mechanism.

During the learning course it was my observation that even the most ‘daring’ WINN professionals encountered constraints to act as change agents. Their position at the periphery or boundary of the DG RWS, having access to all kinds of new knowledge from various sources, was no guarantee for being an effective change agent. In separate innovation projects, the transformation of knowledge-in-use took place, leading to new interpretations of the future problems in water management and to alternative solutions. These new interpretations could subsequently lead to a change in values, attitudes and perceptions (cf. Bolan, 1971), with the WINN professionals as change agents. However, these changes did not seem to go beyond the knowledge community involved in the separate innovation project. Reflection indicates that these communities appeared to be in a stand-alone position, isolated from the actors in charge of policy-making (the DG Water) or maintenance and construction (the DG RWS’ regional agencies). And as earlier indicated, these actors tended to choose a distant position to innovation and were likely to respond defensively to innovative initiatives. Therefore, we can conclude that the legitimacy issue ‘rears its ugly head once more’: if a boundary spanner, even a competent one, is not capable of ‘earning’ legitimacy to act as change agent by the actor(s) who is/are needed for implementation of the intended change, innovation is not likely to be absorbed in new policies or measures of maintenance. Thus, next to Williams’ advocacy for certain skills, the competent boundary spanner must be equally skilled to earn legitimacy for initiating public policy innovation, in a deliberate effort to change the policy regime.

The actual need for and development of these skills have been addressed by the masters, but only implicitly. The masters have, all in their own way, addressed the importance of being able to establish connections. Obviously, this was done directly in the learning sessions prior to and after the meeting with the DG RWS’ top-level management. The designated masters were ‘used’ to explore who to connect to and how to establish the desired connections. In a way, the desired competences of connectivity were instrumental to the painstaking legitimacy issue. And also, in the execution of the study to identify long-term developments for society and the consequences for water management, the issue of being able to attract and involve the right actors, as well as the suitable knowledgeable experts, was brought into the learning course.

8.4.3

THE DEVELOPMENT AND FUNCTION OF BOUNDARY OBJECTS IN WINN’S LEARNING COURSE

In the learning course, extensive use was made of boundary objects. These objects can be divided into three types:

1. Boundary objects that were developed in or as a consequence of the reflections provided in the course, with the aim of facilitating knowledge transfer among its participants and closely related colleagues;
2. Boundary objects that were developed external of the learning course but were employed in it, with the aim of transferring knowledge from knowledgeable experts (the masters) to the participating professionals;
3. Boundary objects that were developed by actors and communities external to WINN, but were discussed in the learning course because of their influence on WINN's objectives, focus and institutional context.

These three types of boundary objects will be discussed in this and the subsequent paragraphs below. The first type of boundary objects are meant to record and transfer knowledge among WINN professionals and their 'closest allies', i.e. colleagues from the corresponding innovation program WnT and disseminate them to the entire DG RWS organization. We can identify the following 'tangible' boundary objects of this type: 1) the handbook 'Learning-to-Innovate', 2) the reports on the learning course's separate sessions, and 3) the WINN website, mainly the learning course's webpage.

The handbook 'Learning-to-Innovate'²⁰ was produced by external experts about conceiving of and organizing innovation processes, as an assignment of the Forum Ervarum's theme leader. This handbook was written during the second year of the learning course (2006) and was handed to the WINN professionals and their WnT colleagues in the last course session that year. The professionals themselves did not actively participate in the conception of the handbook, although some of them were consulted on several draft versions. With 'Learning-to-Innovate' an attempt was made to capture, record and transfer knowledge about the innovation process's principle stages of development, and to identify and discuss several methods for supporting the completion of these stages.

The reports on the learning course's separate sessions were drawn up by the embedded researcher, with the aid of the communication expert at WINN. These reports did not have a formal status, in the sense that they were discussed in the subsequent learning session, but served more or less as an 'aid to memory' for the professionals and as administrative evidence of the implementation of the learning course. As illustrated earlier, the reports were not used in the formal core team meetings in WINN, e.g. to decide on the substance or format of the next learning session or to decide on the 'evolving need for learning' in WINN.

20 An evaluation of the extent to which the handbook became part of the innovation practice of the individual professionals and the program as a whole could not be executed because of its timing. The handbook was published in November 2006. The *ex post* evaluation of the learning course was done only shortly after this, in the second half of November and the first half of December 2006.

However, the reports did contribute to updating WINN's website with regard to the progress of the learning course. The learning course had a separate webpage at WINN's website²¹.

The WINN website provided information about the purpose, objectives and application of the learning course and its operationalization on the topics for reflection and working methods. Perhaps the most important parts of the webpage were the lessons learned section, often referred to as 'the results' and from each master class. These 'results' were from the reports mentioned above and comprised the outcomes of the deliberations between a knowledgeable expert, the master, and the WINN professionals, and included advice from the master on the challenges and concerns the professionals had at that point in time. The learned lessons give keen and colorful insights into the process of knowledge transfer between knowledgeable experts and professionals with regard to specific topics for reflection. Some of the masters agreed to place their (PowerPoint) presentation on Forum Ervarum's webpage as well, leaving behind some 'tangible' food for thought.

In hindsight, the handbook and the webpage may have had value for 'outsiders' because these boundary objects paint a meaningful and recognizable picture of WINN professionals' needs for reflection and the operationalization of these needs in the learning course.

The second type of boundary objects that were aimed at facilitating knowledge transfer between knowledgeable experts and WINN professionals were deployed in the learning course. These presentations, whether PowerPoint presentation or handout on paper, elaborated on the designated topic for reflection that was planned for that specific learning session. However, I argue to accept 'the narratives' provided by the masters as boundary objects as well because of the following observation. The dynamics of knowledge transfer between masters and professionals can be understood by Carlile's (2002) processes of representation, learning and transformation. Based on 'tangible' knowledge the professionals were triggered to articulate and represent the (current) knowledge-in-use about specific aspects of organizing innovation, e.g. through sharing personal experiences. Then, the knowledgeable expert and professionals engaged in a process of reflection by comparing their knowledge bases about innovation through narration and, mostly implicit, by identifying differences and dependencies. The idea of dependencies does not 'hold water' because masters and professionals were not actually working together to interpret and unravel the intricacies of public policy innovation in water management, but only virtually and imaginarily. This makes the actual transformation of knowledge difficult.

However, if we perceive transformation as reaching a mutual understanding between masters and professionals about the type of knowledge that would contribute to resolving

21 the WINN website has been changed in the summer of 2008. The separate webpage for the learning course has been removed since the learning course seems to have no existence in the program any more.

the problematic situation, then, in my opinion, transformation took place. We may accept the fact that this could hardly be the case because the transformation of existing knowledge-in-use doesn't typically unfold in the short period of time in which the knowledgeable experts and professionals interacted²². Transformation usually needs more interaction time, following Carlile's (2002) observation that individuals are not easily convinced of altering their hard-won knowledge. I argue that transformation processes could materialize into altered knowledge bases and subsequent practices, long after the actual interaction has taken place. The transformation of knowledge could grow into being, after some 'incubation time', through renewed interactions with other knowledgeable experts who address the same (type) of issue. Thus, perhaps only brief and shallow, the learning sessions were capable of 'sowing the seeds of knowledge transformation' in the future, as was indicated by some of the professionals. The story about the legitimacy issue (see Section 8.2.2) is the only issue that went through the three-step process of pragmatic knowledge transfer, based on Carlile's thoughts (2002).

The last type of boundary objects refers to 'knowledge objects' about water management innovation that were conceived outside WINN and its learning course. The contents of these boundary objects will not be discussed here, but their influence on the innovation program is clarified next.

Some external boundary objects significantly influenced the need for learning in WINN, casting their shadow onto the program and on its professionals. These boundary objects, mainly documents with a formal status, tended to change the institutional context in which water management innovation, in general, and the WINN program specifically, had to be organized. In this sense, the boundary objects determined much of the 'playing field' for the program, and thus for the professionals' challenge of developing a practice for conceiving of and organizing innovation in water management. The formal documents transferred knowledge from the organizational (i.e. the ministry) and inter-organizational surroundings (i.e. network of actors involved in water management) to the WINN professionals. In addition to formal documents, 'narratives' (i.e. formal and informal communications by the DG RWS's top-level management) and public speeches by the State Secretary of Public Works, Transportation and Water Management and other high-level officials in the domain of water management may be perceived as boundary objects as well. Both documents and narratives penetrated from the policy circuits to the innovation programs, influencing the mind set of the professionals who participated in the learning course and changing their expressed need for learning accordingly. Thus, this influence was tangible in 'the changing specifications' that were formulated prior to each learning session and in the actual deliberations between master(s) and professionals and among the professionals themselves.

22 As indicated in Chapter 7, the master's presence is restricted to one day maximum.

In retrospect, and from the learning course's perspective, the most important boundary objects of this kind in 2005 were the Business Plan 2004-2008 of the DG RWS (see Section 1.3), the speeches by the State Secretary (see Section 7.5.3), and the self-created story about the DG RWS' top-level management's interference in WINN. As we saw in Chapter 1, the Business Plan identified the new organizational objectives of the DG RWS, as well as the preferred attitude and manner of conduct of its professionals. The organizational objectives and the prescribed attitude for being 'an appreciated professional' within the DG RWS determined the maneuvering room for the WINN program and its professionals. The deputy-minister's speeches emphasized the importance of conscious adaptation to the potential impacts of climate change. The desired adaptation is what drives the need for innovation in water management. This emphasis more or less coalesced with the desired long-term objective as the new substantive focus for WINN in 2006. As indicated in Section 7.5.2, the story about top-level management's concerns about WINN's substantive progress and its interpretation by the professionals involved can be perceived as a 'narrative boundary object'.

In 2006 the most important boundary objects²³ were the Annual Report 2005, the 'Innovation Letter – Mobility and Water'²⁴ and the Spatial Principle Decision on the Room for the River²⁵ project. As indicated in Section 1.5, the 2005 Annual Report outlined the objectives for the WINN program and announced the re-organization of the DG RWS' specialist agencies. In the 'Innovation Letter', the ministry proposed the framework for a new innovation policy on its 'own' policy domains of traffic management and transportation, construction, logistics, aviation, and water management that must be pursued in collaboration with knowledge institutes and private sector firms. The Innovation Letter (2006: 7) indicates that "innovations come about through interplay between a large number of actors who, together, support the innovation system". The interplay in the water management field will largely take place between government agencies, private sector firms and knowledge institutes and could benefit from a clear role division among them (see e.g. Laws, 2006). As one can imagine, such a highly politicized pointer can have a significant impact on the professionals who are hired to bring the desired interactions into being.

The Room for the River program is one of the DG RWS' largest infrastructural initiatives in water management, following the initiated shift in the policy paradigm. The project aims

23 Next to these documents and narratives that played a significant role in the objectives (i.e. learning subjects), dynamics (i.e. the focus and tone of the discussions), as well as the outcomes of the learning course, other less prominent boundary objects came into play, such as Policy Guideline Rivers (in Dutch: Beleidslijn Rivieren) and the 'Mobility Bill' (in Dutch: de nota Mobiliteit).

24 In Dutch: Innovatiebrief Mobiliteit en Water – Voor een bereikbaar, schoon en veilig Nederland. De innovatiebrief werd op 21 juni 2006 aangeboden aan de voorzitter van de Tweede kamer der Staten Generaal, door de toenmalige minister van Verkeer en Waterstaat, mw. Peijs.

25 In Dutch: Planologische Kernbeslissing (PKB) Ruimte voor de Rivier werd in 2006 vastgesteld door de Tweede Kamer.

at making the main rivers (Rhine, Meuse and IJssel) ‘more climate proof’, opening up all kinds of potential needs and opportunities for innovation. Progress in the execution of this project was monitored and assessed by the WINN professionals, among others in the learning course, in an attempt to identify opportunities for cooperation. The progress reports on this project served as a knowledge source for these assessments. Lastly, in addition to these formal, written boundary objects, the informal ‘rumors’ about the re-organization process in 2007, as well as the expected structure, objectives, location, and staffing of the reorganized specialist agencies and Deltares, as one can imagine, cast their shadow back on WINN and its professionals, adding more confusion to the question of how to conceive of and organize innovation in a networked environment.

8.4.4

THE LEARNING COURSE AS A PRAGMATIC APPROACH TO KNOWLEDGE TRANSFER?

We can ask ourselves how these ‘external’ boundary objects, both documents and narratives, relate to a ‘three-step process’ of pragmatic knowledge transfer, based on Carlile’s thoughts. Can we speak of actual knowledge transformation (cf. Bechky, 2003) based on the interactions with which the boundary objects were developed and used? In retrospect, the knowledge transformation for these boundary objects did take place by going back and forth between professionals on either side of the knowledge boundaries. The professionals who were often involved in the ‘boundary work’ for the designated boundary objects were WINN’s program manager and the theme leaders of Platform and Forum Ervarum. They were immersed in direct interactions with representatives of network actors at the knowledge boundaries. They then often used the learning course as a medium to feed back their experiences with this ‘boundary work’ to their colleagues at WINN. In the learning course, this then led to a process of interpreting the significance of the outcomes of these interactions. In many cases the professionals referred to management’s documents and narratives and to the State Secretary mentioned above, for example, as having found a ‘meaningful handhold’ in developing their innovation practice. As a consequence, the learning course became a continually evolving process of knowledge transformation to the participating professionals, masters and embedded researcher could relate to, refer to, draw from and add to.

The process of pragmatic knowledge transfer evolves remotely along the stages of representation, learning and transformation (cf. Carlile, 2002). Representation entails the question “What does this new knowledge-in-use, whether written or spoken, represent?” and, “How can I interpret this?”. Learning is then aimed at identifying the differences between and dependencies in new, external knowledge and existing, internal knowledge. The transformation of the knowledge-in-use (e.g. materialized in boundary objects described above), can be deemed an interpretation process, aimed at finding a basis for collaborative action. Based on these boundary objects, both documents and narratives, WINN professionals performed

collaborative analyses and interpretations (“What do they²⁶ mean with this?” and, “What do they expect from us this time?”) during the learning course, with the aid of the designated master and the embedded researcher.

One of the most significant examples of the interpretation process that followed from knowledge transformation in WINN was, of course, the interference by top-level management with WINN’s substantive focus and progress. Their opinion was ‘recorded and interpreted’ by some of the WINN professionals, and then transferred to WINN’s program manager and to the other professionals, part of the way through the third learning session in 2005. A process of continuous interpretation and re-interpretation on this specific matter was started and, of course, went on outside the ‘boundaries’ of the learning course. In this process, only one occasion of direct, actual interaction took place (i.e. the meeting between DG RWS’ top-level management and the WINN professionals in October 2005), which then resulted in an extensive analysis and interpretation of the contents of that meeting during the last learning session of the year.

The joint interpretation of the externally conceived boundary objects can be labeled “sense-making” (cf. Weick et al., 2005), the ongoing process of trying to find out ‘what is going on’, by reflecting on official documents, political statements, and informal rumors and readings.

8.5

THE ZONE OF PROXIMAL DEVELOPMENT MEETS LEGITIMATE PERIPHERAL PARTICIPATION AND BOUNDARY SPANNING: A PRAGMATIC PERSPECTIVE

The zone of proximal development has been brought to the stage to explain the learning course’s significant impact on the development of individual innovation practices, whereas the development of a communal innovation practice remains ‘underdeveloped’. An important question that has been raised only briefly in the previous paragraphs is whether Lave and Wenger’s concept of legitimate peripheral participation, being a clearly defined form of pragmatic, situated learning, and Vygotsky’s concept of zone of proximal development can amplify and strengthen each other. A vital premise for answering this question is that we accept Wenger’s (1998) proposition (Section 6.8.4) that (emerging) communities of practice can be pro-actively developed and nurtured, thus making it (theoretically) possible to facilitate learning-in-practice. As a consequence of introducing a new explanatory concept, this chapter has become a pragmatic mishmash of three concepts about learning and knowledge transfer: the zone of proximal development, legitimate peripheral participation and bound-

26 With ‘they’ is referred to the internal and external stakeholders of WINN.

ary spanning. Because the zone of proximal development is the newly introduced concept in this chapter, I will examine the relationship between this concept and the concepts that were discussed earlier in this thesis, legitimate peripheral participation and boundary spanning.

Based on the foregoing elaboration on the relevance of the zone of proximal development to explain what could not be explained through legitimate peripheral participation, I argue that both theories of learning can reside in the relativist/pragmatist perspective on learning, if two preconditions are met.

First, on the matter of deliberate instruction, which the zone of proximal development is grounded on and legitimate peripheral participation tends to reject, we see a stand-off in the perception of learning between 'deliberate design and spontaneous emergence'. To overcome this stand-off, I propose accepting Wells' (1999) pragmatic suggestion about 'sharing the initiative on what to learn with the learners involved'. The identified topics for reflection that were retrieved through an *ex ante* evaluation of the professionals' needs can be examined in an attempt to identify the professionals' zone of proximal development. Figuring out their perceived needs for reflection is useful for figuring out the development they were inclined to embark on in the learning course. The self-defined zone of proximal participation seems to be the professionals' own provisional interpretation of what it takes to become a 'true' practitioner of innovation at the DG RWS. This interpretation has, of course, an essentially temporal nature: the professionals learn and become more experienced and knowledgeable about conceiving of and organizing innovation, thus shifting their zpd, thus indicating the ironic relationship (cf. Rorty, 1989) between the learning course and its participants.

Throughout the learning course, the professionals provided many suggestions for explaining the contents of the masters' contributions and their modes of 'instruction'. As indicated previously (see Section 2.6.1), the professionals themselves often 'instructed' the embedded researcher about their desires and requirements for the upcoming learning session. Obviously, it is easy to enter into a lengthy discussion about the question of the influence instruction (might have) had on the development of the learners involved and whether this influence was desirable or not. I argue, however, that any instruction that resides in a zone of proximal development, that is self-defined by those who undergo it, is adequate instruction.

In the case of this learning course, the learners themselves decided on what reflection they perceived necessary for their development, both as individuals and as a collective of professionals. The zone of proximal development tends to facilitate individual learning in a social context in a pragmatic way because it acknowledges that these learnings cannot be decided upon beforehand but will gradually evolve through the reflexive nature of 'instruction' and learning. Instruction folds back on the instructor, both master(s) and embedded researcher, and on what is 'taught', changing its nature and impact. And, what should one think of piling 'instruction' on top of 'instruction' which increases the temporal and reflexive nature of learning-in-practice, as is illustrated in one of the participant's remarks:

I did not fully understand the meaning of the master of the last session about [...*topic for reflection*], although I thought it through and through, until this session's master elicited the same topic through another example. Now I can get behind this [...*idea*] because I see the relevance for my own project. But now I wonder how to deal with [...*an additional aspect of the same topic*], since I anticipate this will be relevant in the next stage of my project.

Second, there is an apparent contradiction with regard to the process of internalization that is embraced in the concept of the zone of proximal development and renounced in the concept of legitimate peripheral participation. I argue to accept a proposition that is again indicated by Wells (1999: 321), who claims that

higher mental functions are first social and external, in the sense that they are already implicated in ongoing social activity before any particular individual enters into the activity and gradually becomes able to organize his or her participation in terms of an individual construction of the relevant cultural practices.

This process is defined as internalization. I argue that reflection may be perceived as a mediating, analytical label for understanding the stage in which external artefacts become 'tested and processed' by the learner. Reflection thus refers to the 'incubation process' between the 'manifestation' of external artefacts and the internal processing of these artefacts. It is obvious that reflection plays an important role in learning-in-practice because being immersed in practice does not mean that the practitioner will instantly become an insider. Reflection on what's going on and getting to interpret and appreciate it in the light of performing accurately is an important part of becoming a practitioner. The surrounding artefacts of knowing will be reflected on first, expectedly with the aid of more knowledgeable others, before they will be incorporated into one's individual practice that may correspond with other practices. In turn, the actual practices may become represented in the artefacts of knowing that will be kept up to date with evolving practices.

Next, I argue that the zone of proximal development and boundary spanning, as process of knowledge transfer, are concepts that relate to and strengthen each another. For this argument I have found refuge in two of Wells's observations.

First, Wells (1999) observes that Vygotsky tends to characterize the zone of proximal development in terms of individual assessment and instruction, concerned chiefly with generalized intellectual development, and dependent upon face-to-face interaction. This tends to suggest that the zone of proximal development refers exclusively to teacher-learner interactions, mediated by speech. However, Wells indicates that the zone of proximal development also has value for learning through a "wide range of mediational means and not simple dyads in face-to-face interaction, but all participants in collaborative communities

of practice” (Ibid., p.330). In this sense, the mere anticipation of becoming immersed in an existing practice of ‘knowledgeable others’ can stimulate the learners involved “to rise above themselves” (Vygotsky, 1987: 213), and engage in a process of learning characterized by the zone of proximal development.

Second, the wide range of mediational means includes, in addition to narratives, semiotic artefacts that function as ‘sources of guidance and assistance for learning’ (cf. Wells, 1999). Wells indicates that the boundary objects’ ability to transfer knowledge is not limited to human participants who are present in the situation. Absent participants, whose contributions are recalled from memory or encountered in semiotic artefacts, can also function as significant others. This refers to the boundary spanning capacity of semiotic artefacts beyond direct and face-to-face interaction. The development and use of ‘artefacts of knowing’, other than semiotic ones, can contribute to the process of learning, characterized by zone of proximal development. We can understand that the imagination and anticipation of an absent artefact of knowing, needed to perform across organizational boundaries, will enter learners into a process of knowledge transfer. This process induces them to represent, compare, and thus learn and transform their knowledge-in-use. The mere identification of differences between and dependencies in between existing knowledge bases will stimulate the learners involved to define their zone of proximal development with regard to their knowledge-in-use. This, again, will force them rise above themselves and collaboratively ‘produce new knowledge’ by transforming their existing knowledge-in-use.

To conclude, in my view, and based on Wells’s insights, the arguments above decisively indicate that the concepts of legitimate peripheral participation, boundary spanning, and zone of proximal development can be unified within the relativist/pragmatist framework.

8.6

ASSESSING THE VALIDITY OF THE THEORY OF ACTION

In Sections 7.8 and 7.9, I attempted to answer *the first component of the central research question* (see Section 2.9), how to assess the identified impacts of embedded reflection on innovation practice and knowledge transfer provided in the learning course. Thus far, this entire chapter has been devoted to answering *the second component of the central research question*, which is the interpretation of the impacts of reflection through a relativist/pragmatist inquiry into innovation practice and knowledge transfer.

In this last section of this chapter, I will attempt to assess the validity of the theory of action that underpins this study. Argyris et al. (1985: 232) emphasize that “action science is an inquiry into social practice, broadly defined, and it is interested in producing knowledge in

the service of such practice". Applying knowledge to produce action leads to understanding action itself and its impact on the community and the world. This presupposes a theory of action, a general idea of what works why and how. When recalling the theory of action in this study, I have hypothesized that embedded reflection is capable of producing knowledge to inform change in the innovation practice and processes of knowledge transfer in the WINN program. Of course, change must be perceived or felt necessary before being conceived of and initiated. Informing change in the innovation practice and processes of knowledge transfer should then lead to a better understanding of them. That, then, may lead to new knowledge that can establish more insightful attempts to change the practice of innovation and the processes of knowledge transfer. Thus, an iterative cycle (cf. Lewin, 1948) of intervention, reflection, interpretation, and renewed intervention can evolve.

Assessing the validity of the theory of action begins with acknowledging that embedded reflection plays an important role in learning in context of professional practice. This is articulated by Mink et al. (1993: 8) who describe the value of critical reflection as follows:

To learn from our experiences we must become competent in taking action while simultaneously reflecting on that action. To effectively initiate, implement, and sustain transformation, we must reflect on the values behind our actions. We must be willing to reflect critically on what we are doing. Theories should guide practice, and then practice should inform theory.

Capturing the validity of the theory of action in this particular study begins with answering the question of whether reflection provided in the learning course did inform change. With regard to the innovation practice, I argue that this question must be answered predominantly in the affirmative. The learning course tended to be effective in starting to change what the professionals themselves had identified as their 'need for reflection', expressed in the topics for reflection. These topics refer to the intricacies of the practice of innovation in the WINN program. Attempting to follow up on the self-defined and continually evolving zone of proximal development of the professionals led to changes in certain aspects of their individual practices (see Section 7.8.3). On the collective level, change is only provisionally initiated, with little significant evidence of an actual communal practice. There was one clear exception: the changed substantive focus of the innovation program (see Section 7.8.6). For this specific topic, reflection by means of the learning course tended to be an effective approach to make sense of what was going on (cf. Weick et al., 2005) in and around WINN. The reflective intervention hints at bringing about an initial stage for developing a communal practice for conceiving of and organizing innovation. In a sense, some contours of such a communal practice were being initiated as a consequence of the changed substantive focus of WINN, inducing the professionals responsible for the innovation themes and pilot projects to reconsider their contributions to the future challenges in water management.

Roughly summarized, embedded and collaborative reflection informs change of individual practices more than it informs change of the communal practice of conceiving of and organizing innovation.

With regard to the processes of knowledge transfer, I think that the reflection provided in the learning course did inform change to a limited degree. Embedded reflection facilitated and enhanced knowledge transfer among WINN community members, but did not contribute significantly to coordinated and communal efforts in transferring knowledge from WINN to other innovation programs and agencies of the DG RWS (see Sections 7.9.1 and 7.9.3). The conception of the handbook 'Learning-to-Innovate', as a result of the reflections provided, may be seen as an exception.

As indicated in Section 2.9, informed change, if perceived necessary by the professionals involved, would unquestionably be aimed at advancing the innovation practice and processes of knowledge transfer in WINN. Change, based on reflection, is typically aimed at the advancement or improvement of what is reflected on. This assumption is substantiated by Biggs (1999: 6) who claims that

a reflection in a mirror is an exact replica of what is in front of it. Reflection in professional practice, however, gives back not what is, but what might be, an improvement of the original.

Then the next question is whether change informed by embedded reflection led to an improvement in the innovation practice and knowledge transfer. It may be obvious that change(s) in the innovative practice, on both the individual and collective levels, and in the processes of knowledge transfer are pursued to improve them in a way that the professionals perceive to be valid and relevant. The perceived changes or advancements in certain aspects of the existing practices in WINN were described in Chapter 7. In hindsight it is safe to refer to them as a turn towards a more future- and outward-oriented focus for the innovation activities in WINN. I argue that the changed substantive focus aims at attempting to enhance legitimacy, relevance, and appreciation of the WINN program. This implicit notion of 'what might be' (cf. Biggs, 1999) informs the 'corrective changes' in WINN. However, I hope it has become clear in this study that any changes or advancements in the innovation practices and processes of knowledge transfer that follow from the reflection provided in the learning course are provisional. In my view, with this restriction, the theory of action is valid: reflection is capable of informing change in the practice of innovation and processes of knowledge transfer, by a community of practitioners in their attempt to cope with the ever-evolving contextual circumstances of their social practice. Hence, reflection informs the attempts to enhance the ability to 'aim at moving targets' of this specific community of practitioners.

Working in a community of inquiry in the WINN program, substantiated by the learning course, had an impact on the practice of the practitioners and the embedded researcher. Under the influence of the knowledge that was generated through reflection provided by the learning course, practitioners showed evidence of changing, and even advancing aspects of their individual practice. But also, the reflective methods and approaches with which the practice-oriented knowledge was produced changed under the influence of the produced knowledge in the learning sessions, for example, as put forward in the evaluative interviews. The changes in methods and approaches were described in Sections 7.4.3. and 7.7.3, and indicated that the interventionist practice by me as embedded researcher had changed. The changes in my action-science practice followed the evolving needs for reflection that should have delivered new knowledge to inform their practice in WINN. As indicated in Section 2.4.5, it is my conviction that if an action scientist is genuinely trying to generate knowledge to inform the practice of others, then those who are expected to use this knowledge should be in the position to at least influence the manner in which this knowledge is produced. This will enhance legitimacy, eloquence and relevance of this knowledge. I think that I have made a grounded and authentic attempt in doing so.

Finally, the theory of action in this study gave an indication of how to organize and implement reflection for professionals who are active in public policy innovation, as a specific form of practice of policy analysis. The learning course's capacity to follow up on the evolving needs for reflection of a designated community of practitioners at a specific moment in time, working in a specific institutional context, may be perceived as a pragmatic attempt to operationalize an evolving reflective practice (cf. Schön, 1983). The reflection on the specific features of the learning course itself was described in Sections 7.4.3, 7.7.3, and 7.7.4. Based on these reflections, we must conclude that the learning course implemented in the WINN program was *a* (and certainly not *the*) pragmatic answer to the question "Can we put something in place that we can use to reflect on our practice of conceiving of and organizing innovation and concurrent processes of knowledge transfer in the institutional context of DG RWS?". It would be contradictory to the relativist/pragmatist perspective and pretentious to presume that the learning course, designed and implemented in the WINN program, would be the only way to answer this question.

Chapter 9

Embedded Reflection on Public Policy Innovation – Concluding Thoughts

9.1

INTRODUCTION

In contrast to the two previous chapters, in the last part of this study I will attempt to zoom out from the level of the case study to a higher level of abstraction. This zooming out is directed at assessing the methodological and contextual dimensions of this study, since these are, in my retrospective view, its most prominent features for the science of public administration. Both dimensions frame the objective of this study, that is the embedded reflection on innovation practice and knowledge transfer, situated in a program of public policy innovation for water management. In my view the added value of assessing these two dimensions is vested in the inspiration that this study provides for the question *how* public policy professionals may deal with the dynamics in the context of their evolving practice. In my study this question is answered through providing embedded reflection.

Here, *how* refers to the methodological dimension and is captured by the first part of this study's title, 'embedded reflection...'. In this study, embedded reflection proved to be a double-edged sword. Through embedded reflection, insight was gained into the practical intricacies of professional work in an innovation program of a government agency. Through embedded reflection, action and change in both the practice of innovation and knowledge transfer were informed.

The contextual dimension is represented in the latter part of this study's title '...on public policy innovation'. The context of the case study unmistakably influenced my 'research struggles'. Public policy innovation is enacted in the public domain to which certain 'good virtues' are attributed (see Section 4.8.1). Public policy innovation is closely scrutinized by the legitimacy issue that 'forces' the network of public policy actors to account for their 'daring activities', on a continuous basis.

The methodological and contextual dimensions of this study are the anchors of this last chapter and will be discussed in the following paragraphs. The last section is devoted to

answering the question: if I had to design, facilitate, and evaluate reflection in a program of public policy innovation again, then what would I change, and possibly improve? With the last section I will also reflect on the outcomes of my action science efforts in an attempt to inform action for future reflective efforts in the public policy domain.

9.2

EMBEDDED REFLECTION...

The added value of assessing the methodological dimensions of this study for public administration is vested in its contribution to what Frissen (1999: 240) calls “ironic reflection” which public administration as a science must be able to provide for its object of study. In my view the ability of providing ironic reflection can be examined by addressing three aspects of the methodological dimension of this study: the methodology of the embedded researcher, the added value of embedded reflection for public policy practitioners, and learning as reflexive methodology.

9.2.1

THE METHODOLOGY OF THE EMBEDDED RESEARCHER: THE SCIENCE OF BEING THERE?

As embedded researcher I relied heavily on the concept of action science because I was attempting to inform action and change in a community of practitioners. Applying an action-science approach requires specific competences from researchers. In turn, the object of study, (e.g. the community of public policy practitioners), must be willing and open to be part of an action-science process. Not every community of practitioners will welcome the ‘active meddling’ with their practices by an outsider because this may lead to unproductive feelings of awkwardness (see Argyris et al., 1985).

In my view, embedded research can be renamed ‘the science of being there’, suggesting that it takes a well-thought through, transparent, and accepted approach from the designated researcher with regard to intervening in his/her object of study. This ‘being there’ has a reciprocal nature: the embedded researcher must be capable of it, and the object of study, for example, the community of public policy practitioners, must allow it, or, preferably, initiate it. When these preconditions are met, the development of a community of inquiry in which researchers and practitioners participate, can take place. This community then will be actively involved in providing reflection on the evolving practices.

One of the most important aspects of being there is the building of trust. Based on interventionist research by Argyris (1993), Edmondson and Moingeon (1999: 163) subdivide the idea of trust into ‘trust in competence’ and ‘trust in intentions’. Both are vital for conducting

embedded and interventionist research because they rely heavily on specific competences of the embedded researcher and in this case, the community of practitioners, engaged in public policy innovation. This subdivision accurately captures the evolving relationship between the embedded researcher and the community of practitioners when they are engaged in reflection.

The process of building trust has a reciprocal nature. The community of practitioners must be capable of (learning to) trust(ing) the embedded researcher's competences for organizing, implementing and evaluating relevant interventions. In turn, the embedded researcher must (learn to) trust the community's willingness to co-organize and undergo the interventions, as well as its ability to follow up on them by actually changing (some) aspects of its own practice. In interventionist research, such as embedded reflection in my view is, both embedded researcher and the community of practitioners must (learn to) trust each other's intentions for initiating and executing this type of research. Mutual trust in intentions can be established through a collaborative approach to and responsibility for the interventionist's research activities. By giving the community of practitioners an important say in what topics should be addressed in the interventions, and how this is used to inform action, the embedded researcher can build trust, or at least avoid doubts, about his/her intentions and focus on the question of how to organize and guide the interventions. I argue that by giving the community a decisive say in the 'what' of the interventions, and the embedded researcher in the 'how', both actors could constructively work together to make embedded research effective.

Based on studies of Argyris (1993), Edmondson and Moingeon (1999: 163) claim to have found evidence that

trust in competence is highly influenced by organization members' perceptions of the researcher's ability to understand their organization and to take into account its unique attributes and concerns.

This statement points to the secondary position that even embedded researchers have in relation to their object of research: they have to first become familiar with the intricacies of the community being studied before (collaboratively) analyzing and conceiving of possibilities for intervention. This means that, next to an interventionist approach to research, the 'science of being there' includes the notion of time. Time is an important precondition for building trust. Trust grows over time. A Dutch proverb illustrates this accurately: 'Trust comes on foot and leaves on horseback'¹. This proverb indicates that the embedded researcher and the community of practitioners must take time to trust each other's competence and intentions. They both must grow in their mutual responsibility of thinking through, conducting,

1 In Dutch: *vertrouwen komt te voet en gaat te paard*.

undergoing, and following up on the impacts of reflective intervention. Only over time can ‘being there’ as an embedded researcher pay off, in the way Alfred Schutz has described the idiosyncratic relationship between the action researcher and the object of research by indicating that action science “deals in constructs of the second degree” (1962: 59). Mutual trust that has grown over time legitimizes ‘being there’ as an embedded researcher.

9.2.2

THE ADDED VALUE OF EMBEDDED REFLECTION IN THE PUBLIC POLICY DOMAIN

Embedded research grounded in action science aims at informing action. But next to this, it will undoubtedly deliver new insights about ‘how things work’, solely for the purpose of knowing (more) about some kind of societal phenomenon. Policy-oriented research can benefit from its ability to explore how things work, conceive of options for intervention, and implement and evaluate them. In my view, informing action and/or indicating potential ways for change may be of added value for ‘doing’ complex projects and programs in the public policy domain. Recent theories on the complexity of large-scale projects (see e.g. Gerrits, 2008; Byrne, 2005) indicate that, finally, it is being acknowledged that these types of projects² are perhaps too comprehensive to fully understand, plan, and manage pro-actively, not even by the most experienced and ‘cunning’ project managers. Large-scale projects are often programmed in a rigid way, as if the surrounding societal environment will stay ‘frozen in time’. Apparently, it is thought to be helpful to the project’s progress that its implementation is ‘poured in concrete’³, meaning that nothing, absolutely nothing, will be allowed to change it. This assumption overlooks the substantive and procedural complexity of these projects, as well as their reflexive nature. The impact of the implementation of large-scale projects is bound to fold back on the public policy actors involved, including the general public, even when things go well. The public policy professionals who are in the practice of getting and keeping the project moving are confronted with these reverberations, forcing them to spend a lot of time and effort figuring out what’s going on and on how to deal with it. Managing complex projects in the public policy domain may be perceived as “finding one’s way in the hall of mirrors” (cf. Duijn et. al, 2009), expressing the professional dilemmas that are attached to them. It is my position that embedded reflection can accommodate these dilemmas, based on the analysis of the case study in this thesis. The dilemmas that arose and that public policy professionals were confronted with tended to match with the existential, procedural, and contextual dilemmas that commonly arise in other large-scale, complex projects and programs. Substantive issues seemed to be less ambiguous and

2 The examples of large-scale complex projects in the Netherlands in the physical-spatial domain are numerous: HSL-zuid, Betuwelijn, etc. I think we can anticipate the same in the recently started (in September 2008) project of building the Tweede Maasvlakte.

3 In Dutch: een project is in beton gegoten.

could be ‘solved’ through “mainstream science” (cf. Argyris et al., 1985), although coping with substance tends to become an experiential art as well⁴.

I argue that a learning attitude⁵, preferably grounded in embedded reflection, can proactively inform public policy professionals and other public policy actors involved in undertaking adjustive action. The development of communities of inquiry within communities that practice the implementation of large-scale, complex projects may account for the often expressed wish for ‘moving ahead while keeping a keen eye on potential improvements along the way’⁶. I think that communities of inquiry may be capable of early and constructive warning of potential failures⁷ in complex policy projects or programs. Especially in the public policy domain, the dynamics in the societal context of complex projects and programs can be profound and influential. The context of complex projects and programs in the public policy domain is often riddled with competency disputes between public policy actors, political conflicts, and ever-changing opinions of stakeholders that are amplified by the media. Developing a community of inquiry in the community of practitioners that is assigned to deal with these dynamics can have added value for its practice and the substantive quality of the project or program being executed. The described WINN case study made a reasonable case for acknowledging that structured and regular reflection enables a community of practitioners to make sense of these contextual dynamics. The added value of embedded reflection is perhaps best illustrated by a remark by WINN’s program manager:

If I were to manage a comprehensive and dispersed program as WINN again, I would certainly consider to put something in place like the learning course. Why? Because it has provided [me] with the opportunity of discussing and assessing the dynamics around us in a way that was not possible in our formal work meetings.

Is this remark, then, brought to the forefront as a plea for adding ‘a device’ for embedded reflection in every large-scale and complex project or program in the public policy domain? Well, yes. But only if embedded reflection is provided with legitimate maneuvering room to inform action and change and is perceived as an aid in making sense of what is going on. An additional precondition for the added value of embedded reflection is that interim adjustments of the implementation strategy and plan are not regarded as failures for which

4 As is now visible in the construction of the Noord-Zuidlijn in Amsterdam (summer 2008). The construction of a subway station below the Vijzelgracht can be described as ‘trial and error’. In this respect, the Noord-Zuidlijn may be considered as one big experiment.

5 For example Lee’s concept of adaptive management, 1993

6 In Dutch: vooruitgang boeken en tegelijkertijd alert zijn op mogelijke verbeterpunten.

7 It goes without saying that these communities of inquiry go beyond the common approaches for risk management.

someone must be held responsible⁸. In contrast, interim adjustments are appreciated as an attempt to keep the project or program attuned to the ever-evolving contextual circumstances.

The added value of embedded reflection is that it can at least attempt to lift the practitioners up from the swamp of day-to-day practices by evaluating them with the aid of theoretical concepts and/or (external) knowledgeable experts. Thus, an attempt can be made to give meaning to the practical struggles, getting back on track with the situation again, and if necessary refocus, and gaining a new perspective on 'where to move from here'. In this sense, embedded reflection can truly contribute to the development of a reflective practice (cf. Schön, 1983) in a designated public policy domain.

9.2.3

LEARNING AS REFLEXIVE METHODOLOGY?

In previous sections in this thesis, I have casually touched on the reflexive nature of learning. I will attempt to elaborate on this in the section below, by claiming that reflexivity is an important help for organizing and facilitating learning in an environment of practice. A first thought on learning as reflexive methodology, with WINN's learning course as my frame of reference, is that learning can contribute to a fluid, continuously evolving process of knowledge transformation to which the participating professionals, knowledgeable experts, and embedded researcher can relate, refer to, draw from and add to. This thought emphasizes the reflexive nature of 'something through which we can reflect on our practice of conceiving of and organizing innovation and related knowledge transfer, in the institutional context of the DG RWS?' (see Section 8.6).

In such an environment learning thrives on reflexivity through the iterative cycle of reflection. This cycle operates as follows. The results of an *ex ante* analysis of needs for learning are fed back, through an intervention of some kind, to the practitioners involved, with the aim of informing action in their community. The feedback is bound to provoke reaction from the practitioners, which will fold back on the needs for learning, the applied methods and their setting, and on the embedded researcher as a facilitator of the intervention. This then completes the iterative cycle of reflection (cf. Argyris et al.'s account of Lewin's ideas, 1985): through the reflexive nature of learning an iterative cycle of intervention, reflection, interpretation, and renewed intervention evolves.

8 Undoubtedly, this will be hard to accomplish in the culture of settling scores (in Dutch: afrekencultuur) that often characterizes the public policy domain in the Netherlands.

Through such an iterative process, the community of inquiry – composed of both community of practitioners and embedded researcher⁹ – explored the existing perceptions of the accuracy of both analysis and action. On an analytical level, this reflexive process informs the community of inquiry on two planes¹⁰: cognitive-analytical and conative-practical.

The cognitive-analytical plane refers to the deeper understanding about the practical intricacies which the specific community is engaged in, evolving from the iterative process. An embedded researcher gains more understanding by feeding back his/her assumptions to the community of practitioners in which (s)he is embedded, evaluating their responses and refining and/or altering initial assumptions. In turn, the community will gain more insight in their specific situation through the assumptions fed back by the embedded researcher. This plane refers to the question “What is going on?”, or to the process of sense-making (cf. Weick et al., 2005) that results from and builds on the reflexive nature of learning.

The conative-practical plane refers to the capacity to implement action, evaluate its impact, and refining it along the way. Next to gaining more insight into how to interpret what is going on, the reflexive nature of learning provides answers to the question “Where do we go from here?”. These answers are grounded in the evaluation of the impact of action that was informed and executed based on initial expectations of this intended action: ‘If we do this, then we expect this or that to happen’. The iterative process reveals the accuracy of the actions executed and, through evaluation, the community of practitioners can refine or re-adjust its assumptions and/or actions. Argyris et al. (1985: 35) indicate that “action science is centrally concerned with the practice of intervention”. Here, intervention through reflection connects to learning because, as indicated in Section 6.2, learning is nothing more than change (of attitudes, behavior, and practice) in some direction. However, I argue that along with accepting this plane, we should avoid the mistaken connotation that learning always means progress, improvement or advancement of the things we are doing (see also Section 6.7.3).

The added value of learning as a reflexive methodology for public administration is grounded in my observation that learning informs both aforementioned questions: “what is going on?”, and “where do we go from here?”. Both analytical planes emphasize the notion that learning is not so much a concept for achieving a definite, perfect state of affairs but more an approach for achieving a temporal adjustment or a provisional advancement in the light of

9 In the case of the WINN learning course, the research community also included a variety of knowledgeable experts.

10 Both planes have, in my view, a close connection with the concept of the zone of proximal development (see Section 8.3.1) of the research community involved. By piling reflection on reflection, both embedded researcher and the community of practitioners can attempt to adjust and readjust their competences and capabilities for dealing with the continuously evolving circumstances of the practice they are engaged in.

ever-evolving circumstances. This stance also refers to the previous paragraph in which the potential added value of embedded research for the public policy domain was discussed.

One last remark on learning as it evolved in WINN. In hindsight, I think that the learning course itself has become a ‘fluid, continuously evolving *collection of knowledge* to which the participants, professionals, knowledgeable experts, and embedded researcher can relate, refer to, draw from and add to’. The reflection that is embedded in the WINN program has contributed to the emergence of a collective body of knowledge, and perhaps even enhanced the collective memory of the professionals involved. This thought emphasizes the reflexive nature of knowledge that was produced by the effort of reflecting on the practice of conceiving of and organizing innovation and related knowledge transfer, in the institutional context of Dutch water management (see Section 8.6).

9.3

...ON PUBLIC POLICY INNOVATION

The added value of assessing the contextual dimension of this study for public administration follows from the practice perspective that I have chosen. After all, practice is nothing more than an attempt to deal with the problem of context (cf. Lave, 1988). The context of the WINN program, and of its learning course, is largely defined by its embeddedness in the DG RWS organization and in the Dutch water management domain at large. The embeddedness of WIN in this specific institutional context calls for the examination and discussion of three aspects that characterize the contextual dimension of this study: the legitimacy issue, the creation of alternative policy regimes, and the practical competences for performing public policy innovation.

9.3.1

THE LEGITIMACY ISSUE

Substantiating the legitimacy¹¹ issue differentiates innovation in the public policy domain from innovation in the private domain in private sector firms and knowledge institutes. Of course, in firms and knowledge institutes, too, the legitimacy of ‘spending money without knowing what it will deliver’ is a vital aspect of ‘practicing innovation’. However, these actors can contribute their own resources to whatever they see fit, only scrutinized by potential investors and shareholders in their innovative endeavors. This differs greatly from the

11 The formerly introduced division between internal and external legitimacy (see Section 7.5.3) is abandoned here because innovation in the public policy domain involves public policy actors of all kinds, both internal (e.g. within the designated ministry) and external (within the designated public policy network).

environment of public policy actors as legitimacy is one of the ‘virtues of good governance’ (see Section 4.8.3) of the public policy domain which they are supposed to represent. Using public resources for something that cannot be assured beforehand needs much focused attention and reasoning from those who engage in it.

An effective approach to substantiate the legitimacy issue in public policy innovation starts with pondering the question of which public policy actors to involve. In my view, legitimacy is something that is granted by or can be acquired from other actors, whether ‘living’ (persons, organizations) or ‘dead’ (laws, rules)¹². The question of which internal and external actors to involve can be addressed by looking at the diverging purposes or motives behind the intended innovation. The purpose of public policy innovation is directed at the question of what artefact(s) of public policy regime is (are) change being attempted? The intended change in policy artefact relates to the process of making sense of the new policy regime that should represent and elaborate the desired shift in policy paradigm.

In hindsight and with the WINN case study example as my frame of reference, I have determined three types of innovation purposes or motives¹³. Public policy innovation can be directed at 1) *policy measures* for maintenance and management of the water system, 2) *policy objectives* that frame, guide, and inform measures of maintenance and management of the water system, and 3) *policy debate* about alternative policy objectives and measures for maintenance and management of the water system.

These purposes can be pursued through the activities of a program of public policy innovation simultaneously, as we have learned from the WINN case study. And, perhaps, we could argue that a full-fledged innovation program should direct its efforts at all three purposes simultaneously, provided that these purposes question and/or attempt to change the artefacts of the existing policy regime. Consequently, each type of purpose comes with a different set of public policy actors from whom legitimacy for the innovation efforts can be acquired.

To substantiate the legitimacy of efforts with the objective of changing policy measures for maintenance and management of the water system, at least the public policy actors who are in the business of executing these new, innovative measures must be involved. If the outcomes of innovative activities are tailored to the exclusive needs of the actors, such as water boards, regional agencies of the DG RWS, provinces and municipalities, and contracting and engineering firms, then it can be expected that these actors will legitimize innovation efforts by implementing them. In other words, tax money will be well spent.

To pave the path of legitimacy for changing policy objectives that frame, guide, and inform policy measures, at least public policy actors who are largely responsible for the conception of policies, and the accompanying policy analytical work, should be involved in the effort.

12 This division is derived from the actor-network theory (cf. Latour & Callon, 1989), see Section 3.3.1.

13 See also: Casteren van Cattenburch & Duijn (eds.), *Innoveren en Leren – de leerervaringen van drie innovatieve project van WINN: INSIDE, Ecobeach en IJsselmeer zoekt verdieping*, Den Haag, 2007.

As indicated in the case study, the DG Water is formally responsible for the conception of (new) policies for water management. At the DG RWS, the Water Agency is perceived as being closest positioned to policy-making. Directorates of other ministries, such as the ministries of Spatial Planning, Housing and the Environment, the ministry of Agriculture, Nature Management and Fishery, and the ministry of Economic Affairs¹⁴ are formally responsible for the conception of (new) policy objectives for related policy domains that constitute or, at least, influence water management policies. I argue that innovation efforts that are directed at changing the policy objectives in water management should involve these actors, in order to gain and maintain legitimacy for those efforts.

We could enter into a lengthy discussion about whether an innovation program of an executive agency such as the DG RWS should pursue changing policy objectives (see Section 1.6.2). However, I argue that this will undeniably be the case, anyhow. By ‘inventing’ and testing new measures for maintenance and management of water systems that go beyond the existing policy regime – remember, that was my premise for ‘defining’ public policy innovation (see Sections 4.8.1 and 4.8.3) – the existing policy objectives that frame, guide, and inform the existing policy measures will come under investigation, too. What if newly invented measures prove to be better (i.e. cheaper, more robust, easier to implement, etc.) from a maintenance and management perspective, but tend to contradict the existing policy objective, then what? I think that it will at least be worthwhile to examine the possibilities of changing this policy objective, certainly when the new measure tends to be a concrete manifestation of the desired new policy regime, that should elaborate the strived-for shift in policy paradigm.

The inescapability of taking policy objectives into account when being engaged in innovation, even as an executive agency, is furthermore strengthened by the last objective of public policy innovation, that is, influencing the policy debate about water management. Sharing knowledge about ‘new inventions’ for maintaining and managing water systems inevitably contributes to the policy debate about how to interpret the intended change in the water management domain. Merely by attracting media attention for, let’s say, a new technology or concept for strengthening dykes, innovation programs contribute to the public exchange of thoughts on ‘where to go from here’ with water management in the Netherlands. Involving opinion leaders, such as politicians¹⁵, publicists, and respected knowledgeable in innovation efforts of this type, will legitimize the activities of innovation programs because it is a tangible indication to the general public and network partners that ‘government’ is busy preparing us for future water management eventualities. Currently, the public debate about water management is largely dominated by the (perceived) eventual climate change

14 In Dutch: de ministeries van VROM, LNV en EZ.

15 Of course without bypassing or ‘embarrassing’ the designated member of cabinet, i.e. the State Secretary of Public Works, Transport and Water Management, who is the principal spokesperson for water management innovation.

for which the water system and water management approach (apparently) must be prepared through public policy innovation. The state of affairs in the policy debate about water management inevitably folds back on the policy departments of each of the ministries involved, ‘forcing’ them to take in a position, or at least, supporting their member of cabinet to express his/her position in the debate.

A (formal) dispute between policy departments and executive agencies about who is (formally) responsible for the innovation of policy objectives and who should initiate and engage in the policy debate that unfolds in the pursuit of a new policy paradigm is therefore obsolete because each of them can play a productive role in the process of sense-making.

One last thought about the legitimacy issue of public policy innovation. It may have become clear in the previous line of reasoning that I propose to cooperate with the potential ‘users’ of the intended innovation, whether it be policy measures, policy objectives, or public opinion. By thinking through beforehand which actors might use the intended innovation and for what (formal) purpose, and being attuned to the innovation efforts of these actors and their purposes along the way, innovation programs in the public policy domain might be able to gain and substantiate their (public) legitimacy, at least for the substantive results of their effort¹⁶. This may lead to what Von Hippel (2005) calls “democratizing innovation”, prompting the significant influence of so-called ‘lead users’, by pulling it out of the exclusive domain of ‘producer-led’ science and technology, and leading it into the context of users and application. This induces innovators to incorporate potential ‘lead users’ in their innovation efforts which will, in turn, also increase the procedural legitimacy of the innovation process. Therefore I argue that substantive and procedural legitimacy of public policy innovation, and perhaps of any practice of public policy analysis, are two sides of the same coin.

9.3.2

CREATING ALTERNATIVE POLICY REGIMES THROUGH RHETORICAL AND ACTION FRAMES

Public policy innovation can be achieved through activities that connect to frames that are common to the public policy domain: rhetorical and action frames¹⁷ (cf. Schön & Rein, 1994). Action refers to policy conception and implementation, and rhetoric refers to policy debate. I argue that in public policy innovation, ‘trying out new policy’ and ‘talking about new policy’ are closely related activities, meaning that they both are about attempting to change the existing policy regime. Whereas the WRR (2008) defines innovation as ‘trying

16 De inhoudelijke resultaten van innovatie inspanningen kunnen worden gelegitimeerd door diegenen die zouden moeten (kunnen) gebruiken. Volgens Von Hippel moeten deze eindgebruikers dan ook in het innovatieproces betrokken worden.

17 Of course, rhetoric can be perceived as practice too... a lunch-time observation of my TSPB-colleague, Dr. Merlijn van Hulst.

out something new', I argue that talking about trying something new, can be equally effective to explore an alternative policy regime. Talking about renewal connects to one of the purposes of public policy innovation (see Section 9.3.1), that is the policy debate about objectives and measures that go beyond the existing state of affairs in a policy domain.

Through this study I have come to realize that innovation programs in the public policy domain should be capable of simultaneously playing the rhetorical and the action game to get things moving in the desired direction. This acknowledgment builds on the previous paragraph that pointed to the importance of assessing the innovation objective(s) – what is being innovated – and the target group for the intended innovation – who is supposed to adopt and work with the innovation – in order to gain legitimacy for that innovation.

In public policy innovation, rhetoric and action are intertwined and correlated, building on and reacting to each other. Talk can lead to experiments, and experiments may inform talk. Giving exposure to new concepts and technologies for water management may trigger debate about their meaning, desirability, and added value for resolving anticipated problems in society. In turn, opinion and ideas that constitute the policy debate may be an inspiration for innovative experiments in which they are tried out and evaluated.

An example of how both frames work out in public policy innovation for water management is captured by the deliberations about the coastline defense system¹⁸. Here, we see efforts that refer to both frames. The action frame (i.e. experimenting with new policy objectives and measures) is represented by various innovation pilot projects in which WINN was involved, such as Sand Engine, Ecobeach, and Artificial Reefs¹⁹. The action frame collides with the rhetorical frame (i.e. talking about new policy objectives and measures), which can be seen in the idea of a tulip-shaped island in the North Sea²⁰: an idea that was backed by a resolution²¹ in Parliament (November 2007) for further investigation about the possibility of building islands there. The rhetorics about the new '*grand travaux*', partially meant to re-animate and propagate Dutch craftsmanship in civil and hydraulic engineering, tend to dominate the current efforts of public policy innovation in water management. Referring to impressive works of Dutch engineerial craftsmanship, such as the Deltawerken, should prepare the general public for new interference with the coastal zone and other parts of our extensive water system, and at the same time appeal to potential customers abroad (i.e. water managing authorities in foreign countries).

18 In Dutch: Kustlijn­zorg.

19 In Dutch: Zandmotor, Ecobeach en Kunstriffen.

20 This idea was launched at the Dag van Maars­sen on November 1, 2007, indicating the value of such manifestations for stimulating the debate about future policy objectives and measures.

21 Een motie van CDA-Tweede Kamerlid Atsma van 6 november 2007. De motie kon op steun rekenen van premier Balkenende.

The collision of both frames culminated in the advisory report of the second Delta-Commission (September 2008) which advocates to adopt the outcomes of the innovation pilot project Sand Engine, an alternative approach for defending our coastline, and rejecting the idea of constructing artificial islands off the North Sea coast for this purpose²². The proposed concept of the Sand Engine is subsequently framed in yet another concept, that of Building with Nature, which ‘talks about’ making productive use of natural mechanisms (e.g. sea currents) and natural resources (e.g. sediments) to reach new safety standards along the coastline that are necessary in the light of climate change (see footnote in Section 5.5.2).

This brief and random example shows the relevance of both frames for public policy innovation, in this case in the policy domain of water management. Professionals of public policy innovation should be capable of making use of both frames. In addition, they should be capable of playing both rhetorical and action games, simultaneously, by alternating talking about innovation with experimenting with it. This exhortation relates to the last section on the contextual dimension of this study, meaning, the competences and skills that professionals who are engaged in public policy innovation should dispose of in order to deal with the idiosyncratic characteristics of their context (cf. Lave, 1988) and, hence, be able to develop a productive and meaningful practice.

The purposes of public policy innovation – maintenance, policy and debate – should not be inadvertently coupled with these diverging practices. Each practice can be aimed at pursuing one or more purposes at the same time. There is an obvious tendency, however, to couple pilot projects with maintenance, innovation themes with policy and program management with policy debate. But as argued earlier, innovative pilot projects are capable too of sparking public debate about the legitimacy of innovation in water management.

9.3.3

THE PALETTE OF COMPETENCES FOR THE PRACTITIONER OF PUBLIC POLICY INNOVATION

In Section 5.6 I have drawn attention to my observation that public policy innovation can be largely defined as a practice of sense-making in networks of public policy actors. Innovation in the public domain is a networking activity, which includes a practice of puzzling together perceptions, urgency, legitimacy, knowledge, and stakeholding actors to engage in and embark on an unknown endeavor in renewing certain aspects of the existing policy regime. I argued that professionals who are assigned to conceive of, organize, and execute

22 Of course, artificial islands can serve other future purposes, as we have seen in the lengthy discussions about moving Schiphol Airport to an artificial island in the North Sea (see http://www.verkeerenwaterstaat.nl/actueel/nieuws/nieuwsarchief/pb-Eerste_fase_onderzoeksprogramma_Flyland_afgerond.aspx).

public policy innovation must have different competences than 'ordinary' public policy professionals, simply because they are in the business of developing non-canonical practices (cf. Brown & Duguid, 1991; Orr, 1996) that will gradually change the artefacts and practices of the existing policy regime. The practice of innovation in the public policy domain is a practical challenge of 'coordinating actors, interests and knowledge and stringing them together like beads on a necklace'. By accepting public policy innovation as a specific form of policy analysis, we could argue that the practice of public policy innovation in a networked policy environment tends to become nothing more than what Levi-Strauss (1966) calls "bricolage": 'the ability to make do with whatever is at hand' (cf. Brown & Duguid, 1991). Duijn and Rijnveld (2007: 319) connected the current practice of policy analysis to the concept of 'bricolage', referring to the situated and situational manifestation of practicing public policy analysis and implementing its results.

For this paragraph I will return to my 'definition' of practice: 'anything humans can do to perform or to carry out a task, both individually and collectively, within a certain social environment that constitutes and defines, as well as appreciates, what is done' (see Section 5.3.1). Wagenaar and Cook have attempted to describe practice with more details by claiming that "practice then entails action, community, situatedness, criteria, standards, warrants, knowing, dialectic, discourse, emotions and values" (2003: 149). Of course, their definition is not exhaustive and I propose to at least add the idea of competence to it. There is much attention to the competences that public policy professionals need in order to perform in a turbulent, networked, and volatile environment (see: Arendsen & Crijns, 2000; Nelissen, 1999). Based on my deliberations expressed in Section 4.8.1 about the nature of public policy innovation, I argue that it is obvious that turbulence, fragmentation, and volatility apply to it to a higher degree than to 'normal policy making'. Here, I will elaborate further on competences as an aspect of the practice of public policy innovation. To characterize the competences that are required to practice that innovation, I found inspiration in Laws' (2007) notion of "the divided profession", in Williams' article (2002) about "the competent boundary spanner" and in Weick et al.'s (2005) practical elaboration of "the process of sense-making". In my view, these scholars accurately describe the competences that are needed to work capably and productively in the turbulent, networked and volatile environment of public policy innovation. These competences will be further discussed below.

First, the competence of 'mastering the divided profession'. This competence refers to an important criterion for assessing the new meanings that are brought about. Professionals of public policy innovation should have an idea of what meanings to look for, meanings capable of changing one or more aspects of the existing policy regime in the direction of the desired shift in policy paradigm. This means that, inevitably, these professionals will develop a "divided profession" (Laws, 2007: 54), which requires the competences to perform in or at least understand the codes of the domains of policy, research and practice. From the previous

deliberations on the innovation practice of the WINN professionals, it may have become clear that these domains are ever present in their innovation efforts.

Being able to relate to and work in these three domains simultaneously includes the capacity to assess relevant meanings that characterize these domains with regard to the strived-for public policy innovation. Researchers are inclined to display the novelty and advancement of within the intended innovation. Policy professionals will pursue and emphasize the directional value of the new meanings, and practitioners are mostly interested in devoting their limited time and resources to an innovation that will deliver something practical for improving the execution of their tasks. The ‘divided professional’ acknowledges these diverging meanings and is capable of designing and facilitating a process in which those meanings can be merged into an innovative concept or technology that ‘serves’ all three domains.

Second, the competence to ‘be a reticulist’. The ‘divided profession’ presupposes an additional competence that is accurately described by Williams (2002). In my view professionals who work in the three domains simultaneously need to dispose of their skills of inter-connectivity, or as Williams states, they must be reticulists. They must be capable of boundary spanning, reaching across meanings and connecting them, in an attempt to productively involve representatives of the three domains. Recognizing, making productive use of, and playing the networked field of public policy innovation will enable professionals to identify the beads that make the innovative chain. Professionals of public policy innovation must be capable of recognizing, promoting, and connecting ‘beads’, such as interests, knowledge and resources, that are essential for innovative endeavors. They must be capable of framing and reframing (cf. Schön & Rein, 1994) relevant interests and resources into new meanings that have value for the actors involved and are worthwhile pursuing with activities of public policy innovation, whether it be through rhetorical and/or action frames.

Third, the competence of collaborative sense-making. Public policy innovation takes place in and is created in an environment that is ‘riddled with meaning’, wrapped up in knowledge, interests, ambitions, ideas and solutions, and seemingly often struggling with the legitimacy issue. It is my proposition that the competence of a public policy innovation professional centers around the question of whether (s)he is capable of ‘stringing (new)²³ meanings

23 New is deliberately put between brackets here because the question of ‘so, what is new?’ seems to often poison discussions about potential innovations in the public policy domain. At least, this is my personal experience and annoyance when working on innovation projects at TNO, the DG RWS and Deltares. ‘What is new?’ is an unanswerable question that almost immediately repudiates the analytical and interpretative competences of one’s colleagues without seemingly being interested in the story behind the proposed innovation. What is new depends on the context, the perspective, the assumptions, and purposes of that what is aimed at with the intended innovation. A more productive question would be: to what change does the intended innovation aim to contribute? An example: a desired change in the existing policy regime that should operationalize a desired shift in the policy paradigm.

– knowledge, interests, ambitions, ideas, and solutions – together like beads on a chain. At the same time, the outcome of the stringing effort, a chain of (new) meanings, is appreciated and sanctioned by those who have participated in the ‘stringing process’? In order to gain and maintain legitimacy of the process, as well as the outcome of innovation, the designated professional(s) must be capable of attracting, provoking, seducing, forcing, or coordinating the efforts of exchanging and combining meanings that are directed to changing the existing policy regime. This requires the competence to assess the variation of (new) meanings that bubble up in the process of public policy innovation. What will these meanings contribute to the pursuit of changing the existing policy regime? Can these meanings be ‘welded together’ in an innovative concept or technology that contributing actors can endorse?

I argue that the competences of mastering the divided profession, reticulism and of collaborative sense-making will enable public policy professionals to ‘string beads on a chain’. Based on these three competences for professionals who try to get their innovative job done in the public policy domain, I propose to take another professional skill into consideration, that is the art of acting out of ‘enlightened opportunism’. When looking back and assessing all that I have heard, seen, and experienced from ‘being there’ as an embedded researcher in the WINN program, I cannot refrain from assuming that once in a while something is bound to come along that accurately captures the temporal need for (new) meaning(s) in a designated innovation pilot project or theme, or even for the entire program. Being capable of seizing, or creating, an opportunity seems to be a vital competence to be a competent professional of public policy innovation. The ability to recognize or create some kind of ‘enlightened opportunism’ adds a fourth competence to the palette of competences for the practitioner of public policy innovation and that is the competence of agility.

Sheppard and Young (2006: 912-932) define agility as “a rapid whole body movement with change of velocity or direction in response to a stimulus”. Of course this needs to be interpreted with the background of public policy innovation. Agility, especially in reasoning why a certain (new) meaning that passes by at one moment is valid for changing (one or more artefacts) of the existing policy regime, tends to be a vital asset in being a competent innovation professional. Displaying enlightened opportunism by being sensitive to emerging (new) meanings²⁴ tends to support the legitimacy of the innovative efforts for progress. However, agility does not mean that professionals need not have some idea of what (s)he is trying to accomplish. Being capable of substantiating a legitimate story about the innovation effort in progress is an essential competence for professionals and programs of public policy innovation. The story might need to be adjusted to based on changes in the surrounding environment of the innovation effort, but the key message should remain visible, thereby

24 The Dutch proverb here is: gevoelig zijn voor hoe de hazen lopen.

contributing to the ‘trademark’ of the designated professional²⁵, developing a practice that was earlier described as ‘aiming for moving targets’.

9.4

IF I WERE TO DO THIS AGAIN..., THEN WHAT?

This study covers a period of more than six years. The first one-and-a-half years were spent on figuring out what innovation, analytical policy practice, reflection and learning, and knowledge transfer in the public policy domain might imply from a theoretical perspective. The next two-and-a-half years were spent on designing and implementing the learning course and executing its related adjacent evaluations. The last two years included the descriptions, analyses, and interpretations of the impact of embedded reflection provided by the learning course. However, such an elaborate study as this does not make the question about how to go about reflection on public policy innovation the next time any easier to answer. Nevertheless, in the last section of my thesis I will attempt to give some clues.

Based on ‘20-20 hindsight²⁶’ I should have made a more thorough assessment of the need for reflection in the innovation program. A more thorough assessment informs a more substantiated and clear choice on what to aim for: providing reflection for the *coincidental community of practitioners* of public policy innovation or providing reflection for the *actual practices* in this community of public policy innovation?

This distinction goes back to the concept of communities of practice or communities of practitioners. A community of practice is not necessarily the same as a community of practitioners. Perhaps the first concept tends to focus more on the practice (i.e. the act), whereas the latter may put more emphasis on the group of individuals performing this act. The subtle difference between the two concepts has been addressed by Elkjaer (1999). Rethinking my efforts of providing embedded reflection, I was more focused on the community and not so much on the practice of that community. A clearer choice for either one might have prevented what happened in this study: the partial mismatch between what was expected and what was achieved. I expected that embedded reflection would inform change in the existing practice(s) in the direction of a more communal practice that would be shared by all community members. But as it turned out, I attempted to provide reflection in a specific

25 A tangible example is the adagio ‘De Mooiste en Veiligste Delta’ with which some WINN professionals unite diverging activities, whether initiating a pilot project or contributing to the public debate, into a recognizable innovation effort. This adagio can be retraced in a speech by the State Secretary of Water Management (September 2008), a clear example of the value of playing the rhetorical game in public policy innovation, for example in water management.

26 But then again, isn’t science always ‘retrospective wisdom’?

community of practitioners that did not share just one type of practice and, apparently, did not (come to) realize that a communal practice could be worth developing. And the reason for this seems to be quite trivial: there is no apparent reason for them to do so. Pilot-project managers developed an essentially different practice than theme leaders, program management and program support. The same goes for theme leaders and program management: different objectives, different tasks, different centers of gravity, and different foci of action. This had, however, one significant exception: the development of a communal story on the new substantive focus of the innovation program. Apparently some sense of urgency was felt for working together on making sense of the new programmatic focus. With some good will, we could accept that the 'digestion' of the self-initiated intervention of the DG RWS' top-level management is evidence of a developing communal practice, and so is its translation of the long-term focus in separate innovation themes and pilot projects.

Based on the acknowledgment that reflection tends to, first, inform change on existing individual practices and, perhaps only at a later stage, may inform the emergence of a communal practice, I would propose to tailor reflection to the actual shared practices of professionals engaged in public policy innovation (or in any other practice of policy analysis). With the WINN case study in mind, I would direct reflection to the actual and evolving practices²⁷ with 1) conceiving of, organizing and executing innovative pilot projects, 2) conceiving of and organizing the long-term analytical and policy-oriented activities in the innovation themes, and 3) organizing and executing the management and management support of an innovation program in the public policy domain. An important adjustment of the formerly applied reflection in WINN is that reflection on actual practices and related processes of knowledge transfer *must include* representatives of internal and external actors with whom these practices and processes are developed and shared. Should there be a next time, I would therefore provide embedded reflection on actual and diverging practices and processes of knowledge transfer that evolve in separate parts of the innovation program. With the organizational structure of the WINN program in mind, this would come down to the following:

- for pilot-project managers this means reflection on conceiving of and organizing and executing innovative pilot projects, in collaboration with representatives of water boards, regional agencies of DG RWS, provinces and municipalities, and engineering and contracting firms, for example.
- for theme leaders this means reflection on organizing and executing the long-term analytical policy activities on the innovation themes, in collaboration with representa-

27 The purposes of public policy innovation, that is maintenance, policies and debate, should not be inadvertently coupled with these diverging practices. Each practice can be aimed at pursuing one or more purposes at the same time. Although there is an obvious tendency to couple pilot projects with maintenance, innovation themes with policy, and program management with policy debate.

tives of other policy-related actors such as the DG Water, the DG RWS' Water Agency, the DG Spatial Planning, knowledge institutes and national and forecasting planning offices, for example the Netherlands Bureau for Economic Policy Analysis, the Netherlands Environmental Assessment Agency, and the Social-Cultural Planning Office of the Netherlands²⁸.

- for program management and program support this means reflection on organizing and executing management for a program of public policy innovation, in collaboration with representatives of the DG RWS' top-level management, top-level management of the ministry of Public Works, Transport and Water Management, interest groups of the water management domain and, for example, program management of related innovation programs, such as WnT, Living-with-Water and Habiforum.

If embedded reflection for the more practice-oriented communities working around concrete and shared activities could be established, then we may assume that knowledge generated by this reflection would be more appropriate for informing action and, if necessary, be (more) capable of changing or even improving (certain aspects of) the evolving practice. Applying knowledge while producing it, across organization boundaries and with the objective of contributing to alternative aspects of a new policy regime will, in my view, make the dissemination of what is being innovated self-evident. Knowledge generation, transfer, and application will coalesce in situated and collaboratively developed practices of public policy analysis and innovation. Moreover, providing embedded reflection for these practice-oriented communities may result in reflective practice for conceiving of and organizing public policy innovation in water management. I have argued earlier that complex programs and projects especially in the public policy domain may benefit from reflection-in-practice because of their turbulent and networked environment.

A potential downside of such a practice-oriented approach to provide reflection could be the pro-active, deliberate development of three separate communities within one single innovation program, but with the WINN case in mind, I argue that this will inevitably be the case, precisely because of the idiosyncratic nature of the separate practices in programs like WINN. However, other than giving more emphasis to reflection on evolving, actual practices of public policy innovation, I would (still) align some of the reflective efforts with the coincidental community of practitioners who are involved in different components of the innovation program (program management, themes, and pilot projects). Reflection is well capable of stimulating knowledge transfer across community boundaries (see Section 7.9.1). Maintaining connections between the diverging practices and knowledge bases has proven to be productive for conferring about the substantive focus and progress of the innovation

28 In Dutch: Centraal Planbureau, Planbureau voor de Leefomgeving en Sociaal Cultureel Planbureau).

program, in attempting to promote its legitimacy. In a volatile and turbulent environment of public policy domain, there will be a continuous need for conferring about how to attune everyone's effort to the communal objective of the innovation program. Earlier in this chapter I argued that legitimacy can be acquired from other actors. Each professional is capable of contributing to acquire this legitimacy through his/her actual practice. And, if we were able to capture the actual experiences by changing (some) aspects of the existing policy regime, and reflecting on them, then we may be capable of understanding what it takes to organize and execute public policy innovation through a deliberate 'device' such as an innovation program.

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Samenvatting

(Summary in Dutch)

Waarom is innovatie in het publieke domein noodzakelijk? Waarom is het een gewichtig en tegelijkertijd lastig vraagstuk? Hoe kan een overheidsorganisatie aan innovatie doen? Wat moeten we verstaan onder 'beleidsinnovatie'? En hoe doe je dat, beleidsinnovatie? Hoe kunnen professionals in het publieke domein een innovatiepraktijk ontwikkelen en de opgedane kennis overdragen aan naar beleidsmakers en -uitvoerders?

Dit soort vragen vormen de achtergrond van deze studie die zijn concrete aanleiding vindt in mijn langdurige betrokkenheid bij het WaterINNovatieprogramma van het Directoraat-Generaal Rijkswaterstaat (DG RWS), onderdeel van het ministerie van Verkeer & Waterstaat. Met het WINN-programma beoogt Rijkswaterstaat nieuwe benaderingswijzen en technologieën te ontwikkelen voor het anders omgaan met water.

Wisseling van beleidsparadigma

De noodzaak van beleidsinnovatie in het waterbeheer is ingegeven door het concept integraal waterbeheer en door de verwachte gevolgen van de klimaatverandering. Integraal waterbeheer beschouwt het watersysteem als één systeem dat in samenhang beheerd moet worden. Een systeemgerichte in plaats van sectorale benadering van het waterbeleid en -beheer moet het uitgangspunt zijn. De gevolgen van de klimaatverandering zullen de gebruikelijke routines in het waterbeheer naar verwachting sterk onder druk zetten. Zeespiegelstijging, bodemdaling en extreem natte én droge perioden vragen om oplossingen die verder gaan dan de traditionele technische en waterbouwkundige aanpakken die op termijn als ontoereikend worden gezien. In plaats van technisch-geïnspireerd beheerdenken moeten waterbeheerders veel meer ruimtelijk georiënteerd gaan werken en de karakteristieken van het natuurlijke watersysteem als uitgangspunt te hanteren. De opvatting dat we in Nederland anders moeten omgaan met water wordt gekenschetst als een wisseling van het bestaande beleidsparadigma in het waterbeheer. Een beleidsparadigma is te omschrijven als een cluster van veronderstellingen, overtuigingen, theorieën, methoden en toepassingen die tezamen een onderling samenhangend raamwerk van verplichtingen vormen dat een leidraad is voor de beleidsprocessen in een specifiek beleidsdomein (cf. Burke, 1979). Beleidsregimes zijn de representatie van dergelijke clusters en komen tot uiting in beleidsartefacten, zoals doelstellingen, uitvoeringsmaatregelen, middelen, institutionele arrangementen en machtsverhoudingen. De vraag is nu wat beleidsinnovatie onderscheidt van 'normale' beleidsvorming? Ik omschrijf beleidsinnovatie als de vernieuwing van het bestaande beleidsregime, in een poging het nieuwe, gewenste beleidsparadigma te operationaliseren. Beleidsinnovatie is dan

ook op te vatten als een specifieke vorm van beleidsanalyse die gericht is op de vernieuwing van beleidsartefacten die buiten het bestaande beleidsregime liggen. Vernieuwing cq. verandering van beleidsartefacten binnen de kaders van het bestaande regime is 'normale' beleidsvorming. Een doelbewuste poging tot beleidsinnovatie, bijvoorbeeld door een innovatieprogramma, moet zich mijns inziens dan ook richten op vernieuwingen die buiten het bestaande beleidsregime liggen.

De wisseling van beleidsparadigma is geen gegeven maar een nieuwe werkelijkheid die door waterbeherende instanties zelf gecreëerd is. Deze nieuwe werkelijkheid voor het waterbeheer wordt als zodanig door hen als uitgangspunt voor verdere professionalisering gehanteerd. Ook de achterliggende motieven om tot de wisseling van het beleidsparadigma over te gaan – het concept van integraal waterbeheer en de effecten van klimaatverandering – zijn geen gegevens maar een interpretatie van wat er nodig is voor adequaat waterbeheer. Dat betekent dat het construeren van nieuwe betekenissen een belangrijke rol speelt in het oppakken van de innovatieopgave. Het maken van nieuwe betekenissen in het beleidsveld 'water' is geen vanzelfsprekendheid. Waterbeheer wordt vaak rechtstreeks gekoppeld aan de Nederlandse identiteit en tradities. In het waterbeheer is van oudsher een complex samenstel van beleidsbepalende en beherende (overheids)instanties actief dat ondersteund wordt door een omvangrijk cluster van kennisinstellingen en bedrijven. Waterbeheer heeft grote invloed op de beschikbaarheid en allocatie van de schaarse ruimte in ons land. Het in beweging krijgen van een beleidsveld dat gekenmerkt wordt door lange tradities en een sterke institutionalisering, is dus geen eenvoudige zaak. Voeg daaraan toe de ambiguïteiten die het wezenskenmerk vormen van het publieke domein (cf. Frissen, 2007), en het is duidelijk dat de professionals die de nieuwe betekenissen moeten zoeken, voor een ingewikkelde klus staan.

Beleidsinnovatie als praktijk

Van de professionals die in WINN actief zijn wordt eigenlijk gevraagd een beleidsanalytische praktijk (cf. Wagenaar & Cook, 2003) te ontwikkelen voor beleidsinnovatie in het waterbeheer waarmee (aspecten van) het nieuwe beleidsregime, vorm en inhoud gegeven wordt. In hoofdzaak gaat het om het uitdenken, het organiseren en het uitvoeren van innovaties in de vorm van nieuwe (ruimtelijke) concepten, (hydrologische) benaderingswijzen en/of (waterbouwkundige) technologieën. Deze beleidsinnovaties moeten een nieuw beleidsregime in het waterbeheer dichterbij brengen.

Door de voortschrijdende 'vernetwerking' van de samenleving (cf. Castells, 2000) en de toenemende mogelijkheden van de informatie- en communicatietechnologie die daaraan (deels) ten grondslag liggen, raakt het kennislandschap steeds meer gefragmenteerd. Dat leidt ertoe dat innovatie een steeds opener (cf. Chesbrough, 2006) en meer 'democratisch' karakter krijgt (cf. Von Hippel, 2005). Innovatie in het publieke domein heeft te maken met een toenemende fragmentatie van belangen, kennisbronnen en middelen. Zo ook in het waterbeheer.

De (meer) integrale benadering van het watersysteem en de (meer) ruimtelijke oriëntatie van de waterbeheermaatregelen, leiden ertoe dat innovatie vorm en inhoud moet krijgen over de grenzen heen van sectorale belangen, diverse kennisdisciplines en uiteenlopende middelen. Het gaat dus niet alleen over beton maar ook om fysieke ruimte en maatschappelijk draagvlak. Dat betekent nogal wat voor de praktijk van de professionals die gevraagd worden beleidsinnovatie in het waterbeheer uit te denken, te organiseren en uit te voeren.

Een praktijk laat zich omschrijven als datgene dat mensen kunnen doen om binnen een sociale omgeving te presteren of een taak uit te voeren, zowel door individueel als collectief handelen. De sociale omgeving stelt de randvoorwaarden en geeft waardering voor hetgeen gepresteerd is. Een praktijk is vooral een kwestie van het (leren) omgaan met de uitdagingen van de context waarin men actief is (cf. Lave, 1988). Het ontwikkelen van een effectieve praktijk van beleidsinnovatie in het waterbeheer is gegeven de specifieke context geen gemakkelijke zaak. Vandaar dat de groep Rijkswaterstaters die hiervoor aan de lat staan en participeren in het WINN-programma, bij aanvang van hun betrokkenheid bij dit programma de noodzaak voor reflectie op hun innovatiepraktijk heeft onderkend. De gevraagde reflectie is door middel van een zg. leertraject vormgegeven. Het leertraject heeft gedurende 2,5 jaar reflectie geboden op de zich ontwikkelende innovatiepraktijk en de kennisoverdracht in het WINN-programma.

Reflectie door een leertraject

Reflectie ten behoeve van een professionele praktijk (in het publieke domein) wordt wellicht het beste omschreven door Biggs (1999): reflectie in een spiegel is een exacte weergave van datgene dat ervoor geplaatst is. Reflectie op een professionele praktijk geeft echter niet weer wat het is, maar wat het zou kunnen zijn, een verbetering van het origineel. Hiermee is meteen duidelijk dat met reflectie beoogd wordt de praktijk continu te verbeteren. Uiteraard is elke verbetering tijdelijk, en daarom zoek ik de waarde van reflectie vooral in haar vermogen om een professionele praktijk op continue basis aangesloten te houden bij de veranderende context waarin het plaatsvindt en betekenis heeft.

Het leertraject dat gedurende twee en half jaar is uitgevoerd omvat in totaal twee oefenmasterclasses, acht tweedaagse leersessies en vier evaluatieronden. De leersessies werden telkens opgebouwd uit masterclasses en reflectiesessies. In de masterclasses werd de reflectie op een onderwerp dat door de professionals was aangedragen, steeds verzorgd door externe deskundigen. In de reflectiesessies onderzochten de professionals met elkaar de uitdagingen in de zich ontwikkelende innovatiepraktijk en processen van kennisoverdracht. De evaluaties werden voorafgaand aan (ex ante evaluatie), tijdens (twee ex durante evaluaties) en na afloop van (ex post evaluatie) van de leersessies uitgevoerd. De bevindingen uit de ex ante en ex durante evaluaties werden steeds benut voor het bijstellen van het leertraject. Zo werden de veranderingen en de uitdagingen uit de directe context van het WINN-programma, steeds in de reflecties meegenomen.

Lerende praktijk en boundary spanning

Vanwege de oriëntatie op de beleidsanalytische praktijk van innovatie in het waterbeheer die in mijn studie centraal staat heb ik gekozen voor een relativistisch/pragmatistische inkadering van de theoretische concepten, en alsmede voor de methodologische aanpak van mijn het onderzoek. Dat betekent dat de interpretatie van de effecten van de geboden reflectie ook aan de hand van pragmatische concepten uitgevoerd moet worden. Ik heb gekozen voor de concepten van de lerende praktijk (learning-in-practice, cf. Brown & Duguid, 1991 en Lave & Wenger, 1991) en boundary spanning (cf. Carlile, 2002 en Bechky, 2003).

Leren in de praktijk of een lerende praktijk duidt op het vermogen van professionals om bepaalde vaardigheden en handelingen van elkaar te leren. Een belangrijke voorwaarde is de directe toegang tot de praktijk van (meer ervaren) collega's. Ook het gezamenlijk praten over de problematieken die zich bij het uitvoeren van taken voordoen, stimuleren het leren van elkaar. Gezamenlijke praktijken zorgen voor een identiteit als professional en bevorderen het probleemoplossend vermogen van groepen binnen organisaties.

Kennisoverdracht die ontstaat binnen de professionele praktijk, of daar ondersteuning aan geeft, heeft onvermijdelijk iets van doen met mensen. Kennisoverdracht is sterk afhankelijk van menselijk handelen. Kennisoverdracht betekent het overgaan van kennis (inclusief ervaring, emotie, waarneming) van de ene entiteit naar de andere. Dat betekent dat er grenzen geslecht moeten worden tussen organisatie-onderdelen, belangen, kennisdisciplines en dus tussen mensen die iets met die kennis moeten. Er moeten dus professionals zijn die het vermogen hebben om deze grenzen te overbruggen. Deze worden ook wel boundary spanners genoemd (cf. Leifer & Delbecq, 1978). Meestal worden grenzen overbrugd door gezamenlijk te werken aan kennisobjecten, meestal aangeduid als boundary objects (cf. Bechky, 2003), waardoor er processen van kennisoverdracht ontstaan. De co-productie van kennis geeft het meeste kans op gezamenlijke implementatie en de doorwerking ervan.

De vraag is nu welke invloed reflectie heeft gehad op de innovatiepraktijk en kennisoverdracht. De effecten van reflectie op de innovatiepraktijk en kennisoverdracht in het WINN-programma zijn als volgt te kenschetsen.

Innovatiepraktijk

De effecten op de innovatiepraktijk doen zich voor op twee analyseniveaus, namelijk het individuele en het collectieve niveau. De invloed van reflectie op de individuele innovatiepraktijk is prominenter zichtbaar dan bij de collectieve praktijk. Op het individuele niveau verandert de innovatiepraktijk naar een meer extern gerichte, verbindende en eclecticische activiteit. De professionals veranderen hun (persoonlijke) doelstellingen nauwelijks onder invloed van het leertraject, maar benutten de dynamiek in de externe omgeving meer en beter om deze doelstellingen te bereiken. Onder invloed van de geboden reflectie geven de

professionals aan meer op zoek te gaan naar beweging en betekenis in hun omgeving. Deze tendens vindt zijn weg naar het collectieve analyseniveau waar de veranderingen vooral zijn ingegeven door de zoektocht naar (meer) manoeuvreerruimte en legitimiteit voor de inspanningen in het WINN-programma.

De meest in het oog springende invloed van reflectie is de verandering in de inhoudelijke focus en voortgang van het WINN-programma. Deze verandering is door de professionals door middel van reflectie onderzocht en vertaald in vervolgacties. De legitimatie van de veranderde inhoudelijke focus is gevonden in een gesprek met het topmanagement van DG RWS, dat ook in het leertraject is voorbereid en nabesproken. In dit gesprek is door het topmanagement benadrukt dat WINN zich vooral moet richten op innovaties in het waterbeheer die aansluiten bij de maatschappelijke behoeften op de lange termijn.

De nieuwe inhoudelijke focus van het programma levert de bouwstenen aan voor het ontwikkelen van een (meer) gezamenlijke innovatiepraktijk in WINN door de lange termijn, het maatschappelijke nut en de aansluiting met externe processen centraal te stellen. Daarnaast zorgt reflectie op het collectieve analyseniveau voor meer verbondenheid tussen de professionals en is naar eigen zeggen inspirerend voor hun innovatiewerk.

De effecten van reflectie op de interne organisatie en sturing van het innovatieprogramma zijn beperkt. De geboden reflectie draagt nauwelijks bij aan meer duidelijkheid over de verschillende rollen in WINN en de onderlinge verwachtingen die de professionals van elkaar hebben.

Niettemin blijkt reflectie de noodzaak voor het (verder) ontwikkelen van een meer gemeenschappelijke praktijk niet overtuigend te kunnen aantonen. De belangrijkste reden hiervoor is de innovatiepraktijken van de professionals in hun verschillende rollen weinig gemeenschappelijke elementen blijken te vertonen. Er kan dus niet gesproken worden van één (type) innovatiepraktijk die in gezamenlijkheid verder ontwikkeld kan worden. In plaats daarvan zijn er meerdere uiteenlopende praktijken waarmee de professionals in verschillende rollen, zoals programma management, themaleiders en pilot projecttrekkers, hun innovatietaken uitvoeren.

Kennisoverdracht

De effecten van reflectie op de processen van kennisoverdracht in WINN zijn te begrijpen naar de interne dan wel externe gerichtheid van deze kennisprocessen. De evaluaties laten zien dat reflectie de kennisoverdracht met een interne gerichtheid stevig beïnvloedt. De onderlinge kennisoverdracht tussen de professionals wordt bevorderd omdat tijdens de reflectie in het leertraject van gedachten wordt gewisseld over onderwerpen die hen allen bezighouden. In de discussies met de uitgenodigde masters expliciteren de professionals hun

impliciete kennis over en persoonlijke ervaringen met hun innovatiewerk. Door het expliciet maken van hun tacit knowledge dragen de professionals kennis aan elkaar over, met de master en/of werkmethode als katalysator. Ook het 'importeren' van externe kennis door de professionals wordt beïnvloed door de geboden reflectie. De masters brengen hun kennis in, verwijzen naar externe kennisbronnen en halen persoonlijke ervaringen aan om te reflecteren op de onderwerpen die door de professionals (vooraf) als relevant zijn aangedragen.

De effecten van reflectie op de externe gerichtheid van kennisoverdracht van WINN naar zijn externe omgeving, blijken beperkt te zijn. WINN was bedoeld als 'doorgeefluik' van nieuwe kennis over innovatieve concepten en technologieën voor het waterbeheer naar andere partijen en dan met name naar de eigen specialistische diensten en regionale directies. De doorgeefluik-functie lijkt onder invloed van de geboden reflectie niet of nauwelijks zichtbaar veranderd te zijn.

Theoretische reflectie op de beschreven effecten van reflectie

Wat zeggen de beschreven effecten van reflectie op de innovatiepraktijk en kennisoverdracht als ze geïnterpreteerd worden aan de hand van de theoretische concepten learning-in-practice en boundary spanning? Wat draagt reflectie bij aan een lerende praktijk en aan de overdracht van kennis over de grenzen van organisatie-onderdelen en vakdisciplines heen?

Samengevat durf ik te stellen dat reflectie aantoonbaar bijdraagt aan een lerende praktijk door het ontwikkelen van gemeenschappelijke verhalen door de participanten aan het leertraject waarmee de individuele en collectieve identiteit als innovatieprofessional in WINN versterkt worden. Het belangrijkste gemeenschappelijke verhaal gaat over de interventie van het topmanagement van DG RWS die door de WINN-professionals zelf werd geïnitieerd en de daaruit voortvloeiende bijstelling van de inhoudelijke focus van WINN. Deze interventie van het topmanagement volgde uit onduidelijkheid bij de professionals over de manoeuvreerruimte voor WINN. Daardoor rezen er twijfels over de legitimiteit van de WINN-activiteiten die tot dan toe ontplooid waren ('doen we wel de juiste dingen?').

Het gesprek met het topmanagement heeft de WINN-professionals de legitimatie verschaft om hun innovatieprogramma bij te stellen en hun lopende én nieuwe initiatieven inhoudelijk te herijken.

Door middel van reflectie ontstaat er een lerende praktijk in WINN; de professionals ontwikkelen zich als 'practitioners' van beleidsinnovatie in het waterbeheer. De structurele reflectie op onderwerpen die door de professionals zelf als relevant zijn aangedragen, leidt tot een gevoel van collectiviteit tussen de professionals. Het zorgt ervoor dat nieuwkomers in het programma in het leertraject snel vertrouwd gemaakt worden met de uitdagingen in WINN. Het leertraject wordt benut om voortdurend te reflecteren op de dynamiek in de omgeving van het innovatieprogramma.

Het meest in het oog springende punt is dat geboden reflectie meer aantoonbare invloed heeft op de individuele praktijk dan op de ontwikkeling van een (meer) gemeenschappelijke praktijk. Een verklaring hiervoor wordt gevonden in Vygotsky's 'zone van naaste ontwikkeling'. Blijkbaar ondersteunt de reflectie in het leertraject de ontwikkeling van individuele praktijken waarmee de professionals 'boven zichzelf uitstijgen' (cf. Vygotsky, 1987). Hiermee wordt bedoeld dat de professionals hun gebruikelijke praktijkroutines loslaten en reiken naar nieuwe individuele handelingspatronen.

Om de vraag te beantwoorden of er door de geboden reflectie sprake is van kennisoverdracht als 'boundary spanning' moeten we de grensoverschrijdende functie van WINN nader bekijken. Met andere woorden, bevordert reflectie het functioneren van WINN als 'boundary community' die kennis van de ene naar de andere organisatie-eenheid of vakdiscipline laat 'stromen'? De evaluaties laten zien dat daar slechts ten dele sprake van is. Het leertraject levert een voorzichtige bijdrage aan de boundary spanning functie. Het leertraject levert immers een bijdrage aan een meer externe gerichtheid van zowel het programma als van de individuele innovatiepraktijken. Beter om je heen kijken, je voortdurend afvragen welke partij(en) je kunt of zou moeten betrekken bij de innovatie-inspanningen alsmede een inhoudelijke focus die meer gericht is op de toekomstige maatschappelijke behoeften in het waterbeheer, zijn de eerste schreden op weg naar een community die pro-actief en beargumenteerd kennisgrenzen overstijgt.

De volgende stap zou zijn om kennisoverdracht inrichten als een proces van boundary spanning waarin sprake is van bewuste representatie, vergelijking én omzetting van kennis (cf. Carlile, 2002) van verschillende professionals in het waterbeheer, binnen én buiten WINN. Aan deze stap heeft de geboden reflectie (nog) geen aantoonbare bijdrage geleverd. Het leertraject wordt meer benut voor de gezamenlijke interpretatie van actuele externe kennisbronnen zoals onderzoeksrapporten, formele DG RWS-documenten en uitspraken van bewindslieden, dan voor het (gezamenlijk) voorbereiden en/of vormgeven van de overdracht van kennis naar andere (professionele) communities in het waterbeheer.

Reflecteren op de theoretische reflectie van de effecten van reflectie

Reflecteren op de effecten van reflectie op een specifieke beleidsanalytische praktijk en de bijbehorende inspanningen van kennisoverdracht is het doel van dit onderzoek. Reflecteren op mijn eigen reflectieve onderzoekswerk gaat nog een laagje dieper verder, op het gevaar af dat deze kritische zelf-reflectie trekjes van navelstaren krijgt. Toch is zelf-reflectie onvermijdelijk als je als 'embedded onderzoeker' een poging tot actie-onderzoek (action science, cf. Argyris et al., 1985) ondernomen hebt in een community van professionals die bezig zijn met beleidsinnovatie voor het waterbeheer.

De vraag is wat mij opvalt als ik een stapje achteruit zet en terugkijk op bijna 3 jaar van betrokkenheid bij het WINN-programma en ruim 6 jaar van onderzoek. Wat valt mij op aan mijn eigen aanpak en wat heeft ‘de bestuurskunde’ daaraan?

Terugkijkend vallen mij de methodologische en contextuele dimensies van mijn studie op. De methodologische aanpak kan gekenschetst worden als een co-productie tussen de embedded onderzoeker en zijn object van onderzoek, de community van beleidsinnovatie-professionals voor het waterbeheer binnen de organisationele context van Rijkswaterstaat. Samen hebben we getracht het leertraject zo goed mogelijk aangesloten te houden bij de dynamiek in de omgeving van WINN. Daarmee komt direct de contextuele dimensie in beeld. De behoefte aan reflectie wordt in hoge mate bepaald door de institutionele en organisationele context waarbinnen het innovatieprogramma tot ontwikkeling moet komen. Ik bespreek beide dimensies hieronder kort.

De methodologie van de embedded onderzoeker is vooral de wetenschap van ‘erbij zijn en erbij horen’. De onderzoeker en de community van professionals vormen samen een onderzoeksgemeenschap – de *community of inquiry* – die elkaar’s intenties en competenties moeten leren vertrouwen om tot adequate en gerichte reflectie op handelingspraktijken te kunnen komen. ‘Erbij zijn en erbij horen’ kan niet zonder wederzijds vertrouwen ontwikkeld worden. De meerwaarde van een meer reflectieve praktijk (et. Schön, 1983) voor vraagstukken in het openbaar bestuur die door middel van gekozen aanpak ontwikkeld wordt, is dat er een mensgerichte ondersteuning gegeven wordt aan de uitvoering van complexe beleids- en innovatieprogramma’s en -projecten. Door professionals in het openbaar bestuur voortdurend ondersteuning te geven bij ‘chocola maken’ van wat er om hen heen gebeurt – ook wel *sensemaking* (cf. Weick, 1995) genoemd – wordt de kans vergroot dat een programma of project, in de tijd gezien, aansluiting houdt bij de maatschappelijke dynamiek. Door het reflexieve karakter van leren in de methodologische aanpak pro-actief te benutten – degenen die reflecteren op hun eigen praktijk ‘praten terug’ tegen degene(n) die de reflectie mede-organiseert, en naar elkaar – houdt een leertraject aansluiting bij de dynamische behoeften aan reflectie. Daardoor ontstaat er in de tijd een soort van collectief en fluïde kennisbestand waarvan de betrokkenen in hun praktijk gebruik kunnen maken, waaraan zij hun eigen ervaringen toevoegen en betekenissen en identiteit ontleenen.

De contextuele dimensie van mijn aanpak komt het meest prominent tot uiting in de legitimiteitskwestie die aan een programma van beleidsinnovatie verbonden is. De legitimiteit voor innovatie wordt verkregen door steun te verwerven voor de beoogde vernieuwing van het bestaande beleidsregime. Deze steun wordt verworven bij belanghebbenden binnen en buiten de eigen organisatie. Terugkijkend liggen er mijns inziens drie motieven ten grondslag aan beleidsinnovatie in het waterbeheer: vernieuwing van uitvoeringsmaatregelen, vernieuwing van beleidsdoelstellingen en het voeren van het debat over de vernieuwing van

deze maatregelen en/of doelstellingen. Alle drie typen motieven zijn bedoeld om een nieuw beleidsregime op te bouwen dat het gewijzigde beleidsparadigma in het waterbeheer vorm en inhoud moet geven. De WINN case study laat zien dat de praktijk van beleidsinnovatie voor een belangrijk deel bestaat uit het verwerven van legitimatie voor de vernieuwingsinspanningen bij relevante interne en externe actoren. De actorenconstellatie waarmee innovatie vorm en inhoud gegeven wordt, verschilt per type motief.

Het ontwikkelen van een nieuw beleidsregime kan vanuit twee verschillende perspectieven voor waarneming vormgegeven worden: het perspectief van de retoriek en dat van de handeling. Deze perspectieven worden ook wel aangeduid als ‘frames’ (cf. Schön & Rein, 1994). Experimenteren (handelen) met nieuw beleid of praten (retoriek) over nieuw beleid zijn twee zijden van dezelfde medaille, namelijk het streven naar vernieuwing van het beleidsregime, en dus naar beleidsinnovatie. Innovatie wordt dikwijls gelijkgeschakeld met ‘nieuwe dingen doen’ (cf. WRR, 2008). Ik wijs erop dat innovatie in het publieke domein ook vaak vorm krijgt door het ‘praten over nieuwe dingen doen’. In het waterbeheer zijn vele voorbeelden te vinden van beide ‘frames’ in de vorm van demonstratieprojecten waarin nieuwe technologieën worden uitgetoet, tot de innovatiemanifestaties waarop over nieuwe concepten en technologieën wordt gediscussieerd.

De legitimiteitskwestie en het spelen van het spel van retoriek en handeling geven een indruk van de competenties die samen de praktijk(en) van beleidsinnovatie-professionals zouden moeten vormen. Immers, volgens Lave (1988) is een (handelings-)praktijk niets anders dan de omgang met contextuele problematieken. De competenties van deze professionals zijn te karakteriseren als het bijeen puzzelen (en houden) van percepties, noodzaak, legitimiteit, kennis, middelen en belanghebbenden voor deelname aan een onbekende en (nog) niet kenbare, uitdaging voor het vernieuwen van aspecten van het bestaande beleidsregime. De competenties van dit type professionals – en dat zijn geen ‘gewone’ beleidsmedewerkers, beheerders of onderzoekers – zijn samen te vatten in drie typen van vaardigheden. Ten eerste het leggen van verbindingen tussen belangen, kennisbronnen en middelen – Carlile (2002) spreekt van ‘reticulation’. Ten tweede het werken in het gefragmenteerde domein van wetenschap, beleid en (uitvoerings-)praktijk – door Laws (2007) aangeduid met ‘the divided profession’. Ten derde het ontwikkelen van gezamenlijke betekenissen die meerwaarde en houvast bieden voor degenen die in het programma of project van beleidsinnovatie participeren – door Weick et al. (2005) ‘processes of sensemaking’ genoemd.

Deze vaardigheden culminerend mijns inziens in een vierde vaardigheid, namelijk behendigheid, ook wel ‘agility’ (cf. Sheppard & Young, 2006) genoemd. Behendigheid duidt op het effectief balanceren van belangen, betekenissen, kennisbronnen en middelen voor beleidsinnovaties met welbegrepen opportunisme als grondhouding. Alleen door behendigheid kan een professional zijn/haar beleidsinnovatiewerk in een turbulente maatschappelijke en politieke omgeving tot een bevredigend einde brengen.

Hoe zou ik het de volgende keer aanpakken?

Wetenschap is vooral een zaak van wijsheid achteraf. Achteraf praten helpt om beter te begrijpen wat de resultaten van de gekozen aanpak zijn en hoe ze zijn bereikt. Terugkijkend op het onderzoek kan ik vaststellen dat reflectie op de innovatiepraktijk en kennisoverdracht in het WINN-programma laat zien dat er uiteenlopende vormen van innovatiepraktijken bestaan en niet, zoals vooraf aangenomen, één gedeelde praktijk. Daarvoor lopen de verschillende taken en verantwoordelijkheden teveel uiteen en is er te weinig noodzaak om op basis van de geboden reflectie een gezamenlijke praktijk te gaan ontwikkelen. De zoektocht naar manoeuvreerruimte en legitimiteit en het herijken van de inhoudelijke focus en voortgang van het programma, alsmede de vertaling daarvan in de afzonderlijke innovatiethema's en -projecten, vormt hierop een uitzondering.

Door het naast elkaar bestaan van grofweg drie typen van innovatiepraktijken mogen we aannemen dat er verschillende communities of practice in en rond WINN bestaan. Er is dus niet één community of practice die gevormd wordt door de bijeengebrachte groep van WINN-professionals. Indien er reflectie gevraagd wordt op de innovatiepraktijken van respectievelijk het vormgeven van het innovatieprogramma als geheel, het ontwikkelen van inhoudelijke innovatiethema's of het uitvoeren van innovatiepilots, dan is het noodzakelijk om de specifieke groep professionals die bij elk van de praktijken betrokken zijn bijeen te brengen. En dat betekent dat actieve betrokkenheid van professionals van buiten de groep WINN-professionals, van bijvoorbeeld ingenieursbureaus, kennisinstituten, waterschappen en regionale directies van Rijkswaterstaat noodzakelijk is bij een toegesneden reflectie op de innovatiepraktijk en kennisoverdracht in afzonderlijke thema's en projecten. Een mogelijk potentieel nadeel van deze werkwijze is dat er door toegesneden reflectie binnen de communities die betrokken zijn bij de verschillende innovatiepraktijken, de verbindingen tussen de WINN-professionals onderling (nog) lossier worden. Dat brengt mogelijk de coördinatie en samenhang van de WINN-inspanningen in gevaar. Het zal niet verwonderlijk zijn dat mijn oplossing voor dit nadeel de gezamenlijke reflectie is van de WINN-professionals op hun persoonlijke ervaringen in de afzonderlijke communities rond programma management, themaleiderschap en pilot project management. Een leertraject bijvoorbeeld zoals in dit proefschrift beschreven en geëvalueerd is kan daarvoor een inspiratiebron zijn.

Curriculum Vitae

Michael Duijn (1966) BA, MA, is working as senior researcher at the Netherlands Organisation for Applied Scientific Research (TNO) since 1998. Before TNO he has worked at several municipalities in the south of The Netherlands and at the Institute of Applied Social Sciences in Nijmegen. He obtained his bachelor's degree in Business Administration in 1988 at the Business School West-Brabant and in 1994 he graduated in Policy and Management Sciences at Tilburg University.

At TNO's Business Unit Innovation and Environment he has specialized in designing, implementing and evaluating interaction based approaches of policy research and innovation studies for water and soil management and spatial planning in urban and rural areas.

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Appendix 1

Questionnaires

1.A Questionnaire *Ex ante* evaluation, August – November 2004.

1. What is the current state of affairs in the innovation theme or pilot project that you are responsible for?
 - For theme leaders: what pilot projects reside under your innovation theme?
 - For pilot-project managers: what actions/activities are currently being undertaken?
- 2a. How would you describe the objectives of your innovation theme or pilot project?
- 2b. What is the substantive challenge?
- 2c. What is the procedural challenge?
- 2d. What is the administrative/governmental context?
3. How would you describe the need for innovation?
- 4a. What does the necessary innovation require in terms of knowledge about new concepts and/or technologies?
- 4b. What does the necessary innovation require from the project team members involved in terms of competences, skills and (network) contacts?
5. Do you perceive a need for reflection on the progress of your innovation theme or pilot project, both in substantive and procedural respects?
If yes, which need(s) for reflection do you perceive?
If no, why not (yet)?
6. Do you spend any time on (deliberate) reflection on your innovation theme or pilot project?
If yes, then what are reflecting on? And how is reflection shaped?
If no, why not (yet)?

- 7a. What is the role division between theme leader and pilot-project managers in your innovation theme?
- 7b. For theme leaders: how do you manage pilot-project managers? What would be your ideal management approach?
- 7c. For pilot-project managers: how does your theme leader (try to) manage your role? What would be your ideal management approach?
8. What type of support do you get from WINN's program support?
9. What do you expect from the theme Forum Ervarum/the learning course in supporting your need(s) for reflection?
10. What is the relationship between your tasks in WINN and your formal (policy) tasks in your department (in the specialist agencies) within the DG RWS organization?

1.B Questionnaire First *ex durante* evaluation, November – December 2005.

1. How would you evaluate the separate components of the learning course thus far?

1a. Master class:

- Presentation(s)
- Discussion
- Facilitation
- Opportunities for reflection

Reflective sessions

1b. Intervision

- Method
- Facilitation
- Opportunities for reflection

1c. Case consultation

- Method
- Facilitation
- Opportunities for reflection

1d. Team-building activities

- Method
- Facilitation
- Opportunities for reflection

The impact of reflection can be recognized by the changes that are stimulated through addressing the topics for reflection. The changes can be subdivided into changes you, as a professional, have experienced in your functional role at WINN, and changes that concern the WINN team and the state of affairs in the program (from your perspective).

2. What impact (if any) did the learning course have on:

- You,
- The WINN team,
- The substantive focus and progress of the program,
- The governance of the program, and
- The position of the WINN program in the DG RWS organization?

If we look at your functional role in WINN, what changes have you experienced in your functional role that can (partially) be attributed to the learning course? In other words, what did the learning course contribute to you in your functional role at WINN?

- 3a. Have you changed your current tasks?
If yes, how would you describe the change?
If no, why not?
- 3b. Did you take on new tasks?
If yes, how would you describe the new tasks?
If no, why not?
- 3c. Did you make a change in your 'definition' of the concept of innovation?
If yes, how would you describe the change?
If no, why not?
- 3d. Has your role perception at WINN changed?
If yes, how would you describe the change?
If no, why not?
- 3e. Did you make a change in your responsibilities at WINN?
If yes, how would you describe the change?
If no, why not?
- 3f. Did you make a change in your objectives at WINN (e.g. in your work plan)?
If yes, how would you describe the change?
If no, why not?
- 3g. Did you make a change in your perception of your professional environment, such as the DG RWS or the water management domain?
If yes, how would you describe the change?
If no, why not?
- 3h. Did you develop other professional contacts or relationships inside and outside of the WINN program?
If yes, how would you describe them?
If no, why not?

- 3i. Have you made use of different sources of knowledge or information to fulfil your tasks at WINN?
If yes, how would you describe those?
If no, why not?

Looking ahead to 2006:

- 4a. What new issues will become relevant for your specific role at WINN in 2006?
4b. What new issues will become relevant for the WINN program in 2006?
4c. What wishes, expectations and suggestions do you have for the learning course in 2006, based on your experiences with it over the past year (2005)?

1.C Questionnaire Second *ex durante* evaluation, November – December 2006.

1. How would you evaluate the learning course over the past year?
2. How would you evaluate the master classes?
 - Presentation(s)
 - Discussion
 - Facilitation
 - Opportunities for reflection
- 3a. What new issues have become relevant for your specific role at WINN in 2006?
- 3b. What new issues have become relevant for the WINN program in 2006?
4. Should the learning course be continued in 2007?
If yes, what are your motives for suggesting this?
If no, why not? What type of approach may replace the learning course in providing room for reflection in WINN?
5. If you think the learning course should be continued in 2007, what wishes, expectations and suggestions do have for it in 2007, based on your experiences with it over the past year (2006)?
 - Form or method(s);
 - Substantive topics for reflection;
 - Frequency;
 - Participants: pilot-project managers? Members of WnT? Other professionals at the DG RWS?

**1.D Questionnaire *ex post* evaluation,
November – December 2006.
The *ex post* evaluation concerns the time span
2004 – 2006.**

1. What do you think of the substantive topics for reflection that were selected?
2. For which target group in WINN (program management, theme leaders, pilot-project managers) do you think the organized learning course was the most relevant and suitable?
3. What was your main motive for participating in the learning course?
4. What was, in your mind, the added value of the learning course for:
 - The innovation program as a whole?
 - The formal core team meetings?
 - The knowledge transfer between WINN members?
 - The knowledge acquisition of external knowledge (from the outside to the inside)?
 - Your innovation theme or pilot project?

The impact of reflection can be recognized in the changes that are stimulated through addressing the topics for reflection. If we look at your functional role in WINN, what changes to your experience in your functional role can be (partially) attributed to the learning course? In other words, what did the learning course contribute to the development of your own practice of innovation?

- 5a. Have you changed your current tasks?
If yes, how would you describe the change?
If no, why not?
- 5b. Did you take on new tasks?
If yes, how would you describe the new tasks?
If no, why not?
- 5c. Did you develop new competences or skills?
If yes, how would you describe them?
If no, why not?

- 5d. Has your role perception at WINN changed?
If yes, how would you describe the change?
If no, why not?
- 5e. Did you make a change in your responsibilities at WINN?
If yes, how would you describe the change?
If no, why not?
- 5f. Did you make a change in your objectives at WINN (e.g. in your work plan)?
If yes, how would you describe the change?
If no, why not?
- 5g. Did you make a change in your perception of your professional environment, such as the DG RWS or the water management domain?
If yes, how would you describe the change?
If no, why not?
- 5h. Did you develop other professional contacts or relationships inside and outside of the WINN program?
If yes, how would you describe those relationships?
If no, why not?
- 5i. Have you made use of different sources of knowledge or information to fulfil your tasks at WINN?
If yes, how would you describe those other resources?
If no, why not?

Appendix 2

List of persons interviewed

Ex ante evaluation, August – November 2004.

Member of program support, August 23, Den Haag.
Theme leader Coastal Zone, August 24, Den Haag.
Theme leader Rivers, August 25, Arnhem.
Theme leader Sea, September 1, Rijswijk.
Theme leader Water & Housing, September 8, Delft.
Theme leader Platform, September 15, Delft.
Theme leader Sediments, September 20, Lelystad.
Member of program support, September 28, Den Haag.
Program manager, September 28, Den Haag.
Pilot project manager INSIDE, October 6, Utrecht.
Pilot project manager ComCoast, November 1, Delft.

First ex durante evaluation, November – December 2005.

Theme leader Rivers, November 15, Arnhem.
Assistent theme leader Rivers, November 15, Arnhem.
Theme leader Platform, November 16, Lelystad.
Theme leader Sediments, November 16, Lelystad.
Member of program support, November 22, Den Haag.
Member of program support/controller, November 22, Den Haag.
Program manager, November 22, Den Haag.
Theme leader Water & Housing, November 22, Delft.
Theme leader Forum Ervarum, November 29, Den Haag.
Member of program support, November 29, Den Haag.
Assistent theme leader Water & Housing, December 6, Utrecht.
Communication professional of WINN, December 6, Utrecht.
Remark: The theme leaders Coastal Zone and Sea had abandoned the WINN-program during 2005 and were not replaced at the time of the interviews.

**Second ex durante evaluation and ex post evaluation,
November – December 2006.**

Theme leader Coast Zone & Sea, November 22, Den Haag.

Assistent theme leader Coast & Sea, November 22, Den Haag.

Assistent theme leader Water & Housing, November 24, Utrecht.

Communication professional of WINN, November 24, Utrecht.

Theme leader Water & Housing, November 27, Utrecht.

Member of program support, Bouwdienst, November 28, Utrecht.

Program manager, November 28 and December 5, Den Haag.

Pilot project manager ComCoast, December 5, Delft.

Manager Implementation of Wegen naar de Toekomst, December 7, Delft.

Theme leader Rivers, December 11, Arnhem.

Assistent theme leader Rivers, December 11, Arnhem.

Theme leader Platform, December 12, Lelystad.

Theme leader Sediments, December 12, Lelystad.

Remark: the innovation themes Sea and Coastal Zone merged into one theme that was managed by a new theme leader.