

POWER IN TRANSITION

Empowering Discourses on Sustainability Transitions

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POWER IN TRANSITION
Empowering Discourses on Sustainability Transitions

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Flor Rita Dinis de Araújo Avelino

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Promotiecommissie

Promotoren:

Prof.dr.ir. J. Rotmans

Prof.dr. R. Kemp

Overige leden:

Prof.dr. J. Grin

Prof.dr. W.A. Hafkamp

Prof.dr. J.C.M. van Eijndhoven

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CHAPTER 1.

Introduction: Questions on Power in Transition

*Grant us the serenity to accept the things we cannot change,
Courage to change the things we cannot accept,
and Wisdom to know the difference.*

Inspired by the "Serenity Prayer"
by Reinhold Niebuhr

It is a law of nature that human beings cannot fly like a bird, yet we invented airplanes, helicopters, zeppelins, air balloons, and space shuttles, thereby changing our incapability of flying, even up to a point where we can fly all the way to the moon. When people say that something 'cannot be changed', they are not making an objective statement about reality in terms of it being physically impossible. Instead, they are suggesting that *they* are not capable of changing things, or, if they were capable, that the costs and risks of change would be too high. A judgment about 'changeability' ultimately comes down to a judgment about *acceptability* and *capacity*. Capacity relates to one of the most notorious themes in human history: *power*. In the dictionary, the word 'power' refers to the capacity to influence the behaviour of others, or the general course of events¹.

Why are things the way they are, and why do they remain the same? Some say it is because of vested interests and the powers that be. Why then do things sometimes change radically? Some say it is because of a 'will to power', which has fostered revolutions, wars, and new regimes. Power's love-hate affair with both inertia and change is an age-old theme for philosophers, historians, and social scientists. It is also a hot topic in popular culture, as can be illustrated by Hollywood blockbusters, such as *The Godfather*, *James Bond*, *Lord of the Rings*, and *Harry Potter*. Gangsters and cops, conservatives and rebels, psychopaths and gentlemen, angels and demons, benevolent magicians and wicked witches, good versus bad guys; the one thing they all have in common is that they have a certain amount of power to either foster or avoid great changes to society. The central message is often one and the same: power can be used for both 'good' and 'evil', but the pursuit of this capacity as a goal in itself is something inherently 'evil'.

Most of the time, the distinction between 'good' and 'evil' is remarkably less clear than it is in movies. Think, for instance, of human transport. The way in which we have come to move through space and time is miraculous. Just imagine the many pleasant things we would miss if it were not for all the cars, roads, boats, trains, planes, stations, and airports we constructed along the years, climaxing in the mobility explosion in the second half of the 20th century, making these technologies available to a large amount of people. But we know that there is a darker side to this miracle. Every year 1.3 million people die, and twenty to fifty million people are injured, as a direct result of road traffic accidents (WHO 2011). Not to mention the uncountable fatalities as a result of oil-related wars, lung diseases, and obesity, all of which can be related to our ever accelerating mobility habits, and the hazardous impact on our physical and social environment. Our mobility practices produce chemicals, smells, noises, spatial fragmentation, and other unintended side-effects. These not only colonise our daily sensory experiences, but are also seen as a substantial threat to the future of our planet and its inhabitants, including all its non-human species.

The creation of our current transport system was enabled by human curiosity and ingenuity, but also by the urge for expansion, colonisation, and competition. This 'will to

¹ As described in the first definition of power in the Concise Oxford English Dictionary

power' produced rapid changes to our transport system, thereby empowering millions of people across the globe to travel further, faster, and at decreasing prices. At the same time, this mobility system allows and seduces us to wage wars, sacrifice uncountable human lives, and devastate our surrounding ecosystems. Yet it is in the interest of a large number of people to keep this transport system as it is, and to continue its current growth. Radical changes to our mobility practices are not in the interests of those people, who often ridicule and contest calls for radical change. And even people for whom radical changes could be of interest often react cynically.

It should not surprise us that calls for radical change are often met with distrust and scepticism. One does not fear the change itself, but the shifts in power which it entails. For how can we be sure that, when supporting radical changes to society, we are not unknowingly enabling a future that is worse? But the paradox is that by avoiding change, one is, willing or unwillingly, supporting those 'powers that be' for which it is convenient that things remain as they are. Power is ubiquitous; it is everywhere and it even hides in non-decision making (Lukes 1974). Therefore, 'accepting what we cannot change' is just as much an act of power as 'changing what we cannot accept'. And so is 'distinguishing between one and the other'. But *how* do we distinguish one from the other, and how do we deal with issues of power?

This is a book about power and transformative change. It explores how groups of people who are trying to transform the mobility system are affected by notions of change and power, and how they deal with the dilemmas of power. Academic literature on power and transitions offers concepts to grasp phenomena in practice. And *visa versa*, observing these practices allows us to gain new understanding of power in relation to transformative change. More specifically, this book is about power in relation to *transition studies*, a new research field which has the ambition to both understand and foster societal transformation. It is also about the role of power in *transition management*, a new prescriptive governance model for sustainable development.

1.1. INTRODUCTION TO TRANSITION STUDIES AND TRANSITION MANAGEMENT

Understanding structural change is one of the great challenges in social science. In order to face this challenge a field of studies has recently been formed that focuses on 'transitions', defined as non-linear processes of social change in which a societal system is structurally transformed (Grin et al. 2010, de Haan and Rotmans 2011, Geels and Schot 2007, Loorbach 2007). A 'sustainability transition' generally refers to a "radical transformation towards a sustainable society as a response to a number of persistent problems confronting contemporary modern societies" (Grin et al. 2010:1). One of the central premises in transition studies is that persistent problems are symptoms of unsustainable societies, and that dealing with these persistent problems in order to enable more sustainable systems, requires transitions and system innovations. While a system innovation refers to transformations within specific subsystems, a transition transcends individual systems and comprises various system innovations at different scale-levels and over a long-term period of time (Loorbach & Rotmans 2010a). A transition is the result of 'co-evolution'; "when the interaction between societal subsystems

influences the dynamics of the individual subsystems, leading to irreversible patterns of change” (Grin et al 2010: 4). Transition research has its intellectual roots in innovation studies as found in social studies of technology (Rip & Kemp 1998, Geels 2005). While originally the focus was on transitions in *socio-technical* systems (e.g. mobility, energy, agriculture), recent developments have broadened the focus towards societal systems more generally (e.g. regions, sectors) and to ‘reflexive’ governance for sustainable development (Voss et al. 2009). Analytically, the understanding of *transition processes* can be distinguished from the understanding of *how actors (can) influence* transition processes: the first object of study is referred to as *transition dynamics*, the latter as *transition management* (Rotmans et al. 2001, Loorbach 2007)².

For transition *dynamics*, the primary object of study concerns societal systems at the level of sectors or regions. This systemic perspective requires a holistic view that acknowledges the interaction between human and non-human aspects. The influence on societal systems is not only social, cultural, institutional, and political, but also economic, ecological, and technological. Social actors within these systems are reflexive and as such shape and influence the dynamics of the system they inhabit. But as societal systems are complex (e.g. interactions at the micro-level may have unintended effects at the macro-level and they adapt to the systems’ surroundings), these systems have a functional dynamic of their own which no actor can control. In order to analyze transition *dynamics*, different levels in time and (functional) aggregation are distinguished, resulting in the ‘multi-phase’, ‘multi-level’, and ‘multi-pattern’ frameworks that are applied in transition analysis (Geels & Schot 2007, Grin et al. 2010, De Haan and Rotmans 2011). This research will reconsider these frameworks from a power perspective, especially the *multi-level framework* (MLP), which distinguishes between different levels of functional aggregation in terms of ‘landscape’, ‘regime’, and ‘niches’.

Transition *management* is a governance model that aims to ‘resolve persistent problems in societal systems’, based on transition dynamics insights. It is presented as “a new mode of governance for sustainable development” (Loorbach 2007), that “tries to utilize the opportunities for transformation that are present in an existing system” by “joining in with ongoing dynamics rather than forcing changes” (Rotmans et al. 2001). The underlying assumption is that full control and management of persistent problems is not possible, but that one can ‘manage’ these problems in terms of adjusting and influencing the societal system, by organizing a joint searching and learning process focused upon ‘long-term sustainable solutions’ (Loorbach 2010, Loorbach & Rotmans 2010b). This challenge is captured in a “cyclical process model”, which serves to organize a participatory stakeholder-process that is aimed at envisioning, learning, and experimenting (Loorbach 2007:115). A central element is the set up of a transition arena: “a multi-actor governance instrument [that] intends to stimulate and coordinate innovation through creating shared (new) problem definitions and shared long-term goals (...) an open and dynamic network in which different perspectives, expectations and agendas are confronted, discussed and aligned where possible” (Ibid:132-133).

² See also *strategic niche-management* (Hoogma, Kemp, Schot and Truffer 2002)

The transition management model has gained much attention from policy-makers, managers and other practitioners in the last few years, particularly in the Netherlands. It has been applied in multiple policy contexts, and to various programs and projects (Loorbach & Rotmans 2010, Kemp & Rotmans 2009, Avelino 2009). In 2001 the concepts of 'transition' and 'transition management' were introduced in the *4th Dutch National Environmental Policy Plan*, presented as 'a strategy to deal with environmental degradation by stimulating sustainable development as a specific aim of policy making'. Several Dutch ministries mentioned the strategy, including the Ministry of *Economic Affairs*, the Ministry of *Housing, Land-use Planning and Environmental Management* and the Ministry of *Transport, Public Works and Water Management*. Moreover, in 2003 the Dutch government decided to grant subsidies from natural gas revenues to 'strengthen the Dutch knowledge economy in its innovative and societal needs', by improving the 'knowledge infrastructure' in fields that have a specific societal relevance. 37 Research programs were funded through these gas revenues, totalling 800 million euros. Transition management was (partly) applied in some of these programs, and many of these programs were studied, evaluated and monitored by transition management researchers.

Transition management can be regarded as a governance model under development. It is continuously adapted and extended on the basis of explorative and design-oriented research on both *transition dynamics* and *transition management*. Deductive and theoretical research methods are combined with inductive and empirical methods, including modelling approaches and action research. Complexity theory, governance theory and social theory are used to develop management 'instruments', which in turn are adapted on the basis of empirical testing and action research experiences. Research on transition management is primarily positioned in the governance literature, with reference to concepts such as reflexivity, networks, social learning, participation and co-production. The transition management model as it exists today has been 'co-produced' by researchers, policy-makers and other practitioners (Kemp and Rotmans, 2009, Loorbach, 2007). Researchers are not just describing and analyzing transition management practices or developing instruments, nor are they merely involved in evaluating the abovementioned transition programs and offering suggestions for improvement. Rather, researchers are also actively involved in advocating transitions to sustainability and, in that context, they are preparing and organizing participative processes in various policy fields.

1.2. CRITIQUE ON TRANSITION MANAGEMENT AND THE ISSUE OF POWER

Like many new fields of research, transition studies have been met both with enthusiasm as well as with sceptical and critical voices. The latter have been heard in particular with regard to the transition management model and its application in practice. One of the most common points of critique is the lack of attention to power and politics in much of the transition (management) literature (Shove & Walker 2007, 2008, Duineveld et al 2007, Smith & Kern 2008, Smith & Stirling 2008, Hendriks 2007, Meadowcroft 2007). As pointed out by Meadowcroft:

Transition management is not primarily concerned with the political processes through which societal goals are determined and revised, collective decisions are enforced, and resources are authoritatively allocated. Nor does it focus on the evolution of societal values and value conflict, and with spheres of individual and family life, the definition of group identities, and citizenship. Yet all these spheres are important to processes of societal change, and relevant to governance for sustainable development (2007: 10)

Other authors point out that “the tactical opportunities for the structural power of incumbent socio-technical regimes to mould discourse” challenge the “straightforward ‘managerial’ understandings of transition management and sustainability governance”, and that it is “unclear how these sit in relation to prevailing policy institutions and political processes” (Smith & Stirling 2008: 12 -13). Authors also question the democratic legitimacy of what some interpret to be a technocratic mode of governance (Hendriks 2007), in which “deliberations over structural transformation of socio-technical regimes affecting the lives of millions of people are led by a group of elite visionary forerunners” (Smith & Stirling 2008:12). Although these democratic challenges in transition management are to a certain extent inherent to its network approach, it is stated that “while the democratic shortcomings of network governance are borne out in transition practice, its democratic aspirations are not” (Hendriks 2007:1), and that consideration of democratic aspects has been too limited (Hendriks & Grin 2007).

Some authors also critique the prevailing notion of ‘sustainability’ in transition management. Even though the literature on transition management emphasizes the ambiguous and subjective nature of sustainability and approaches the notion of sustainability through participant deliberation and ‘reflexivity’, it is found that too little attention is given to the strategic games surrounding sustainability discourse (Smith & Stirling 2008, Smith & Kern 2008). On that point, authors ask the following critical question: “with notions of sustainability displaying such malleability to strategic interpretation, how credible is it that a transition management process that begins with a vanguard of elite visionary forerunners can really overturn structurally embedded regimes?” (Smith & Stirling 2008:15).

The concern about strategic interpretation and ‘malleability’ does not only apply to sustainability discourse, but also to transition (management) discourse more generally. Shove and Walker state that “there is a politics to transition management, a playing out of power of when and how to decide and when and how to intervene, which cannot be hidden beneath the temporary illusion of ‘postpolitical’ common interest claims of sustainability” (2007:765-766). They emphasize that it is necessary to reflect on this politics of transition management as “a now identifiable set of ideas around which actors and institutions explicitly orient themselves” and to ask ‘what the label of transition management does’, exactly (2008:1013). The authors even go as far as to state that the transition management model *obscures* the “fluid and contested matters of boundary making and definitional power” (2008:1014).

Last but not least, authors express concerns about the involvement of researchers in transition politics. As described earlier, researchers are not merely describing and analyzing transition management practices; they are also involved as action researchers in the application and advocacy of transition management in various policy fields. Critics question this involvement of researchers, because “even though many researchers are undoubtedly perfectly capable of separating their double roles, it is well imaginable that this double role can obscure the analysis. The involvement with a policy practice or innovation project can possibly function as an impediment for a realistic analysis of the process. It makes it hard to make ‘honest’ claims about the role that the researcher himself has played in the process” (Duineveld et al., 2007: 26, *translated from Dutch by F.A.*). This relates back to the concerns about definitional power; not only can transition discourse be used by *societal actors* for ‘strategic interpretation’; it can also be used by *researchers* to influence how sustainability issues are framed. Whether or not this is problematic in itself, critics emphasize that this role of researchers needs to be critically reflected upon. This dissertation explicitly reacts to the above mentioned critiques by addressing various faces of power in transition (management), both in its practice and in its theory.

1.3. TRANSITION MANAGEMENT AND THE MOBILITY SECTOR

The *theoretical* focus of this thesis is on the role of power in transition. The *empirical* focus is on transition management politics in the mobility sector or, more specifically, on the way in which certain groups of actors try to transform the Dutch mobility sector. The topic of ‘mobility’ is in itself illustrative of different manifestations of power in relation to transition processes and sustainability discourse. Mobility is both a driver and outcome of societal transformation and has direct consequences for other sectors, such as energy and spatial planning, and the entire economic process of distributing goods and services. On the one hand, the mobility sector is inherently technocratic due to the large technological and infrastructural systems involved and their management by public-private actors. On the other hand, mobility is an inherently socio-economic issue in terms of travelling behaviour and resource distribution. Mobility is often the object of fierce public debates regarding pricing policies, congestion, road expansion, and environmental degradation. Furthermore, mobility is not confined to geographical, temporal, or political scales, as it plays a key role in connecting long-term international, national, and regional developments to short-term local and individual circumstances. It is this *interplay* between the technological and the social, the public and the private, the political and the technocratic, the global and the local, the long-term and the short-term, which makes mobility an interesting context in which to study manifestations of power in transformation attempts.

In addition, the Dutch have always depended on mobility to conquer and maintain a powerful position on the European and international scene. By the 1960s the seaport of Rotterdam and Schiphol airport had established themselves as important gateways on the world map. In the 1970s voices of protest started rising against the harmful effects of transport, and ever since the Dutch have been faced with dilemmas between ‘economic growth’, ‘accessibility’, and ‘liveability’ (Schot 2002). The Dutch are situated in one of the

most densely populated areas in the world, which has significant implications for transportation and spatial planning. On the one hand, the Dutch have developed an advanced bicycle infrastructure, a high amount of waterways, and a relatively wide accessibility by public transport. Foreigners who visit the Netherlands will find people cycling freely through flat landscapes, boats drifting through picturesque canals, and a public transport system that is so well organized that people even complain when it deviates from the time schedule by even three minutes. On the other hand we see a country with a notorious colonial past in international trade, which still resonates today as the Dutch are the second country in the global export of oil, and encompass one of the world's largest harbours for international container flows. It is this multi-faceted image of Dutch mobility which makes it interesting to study the exercise of power at several levels of aggregation, including both individual freedom of movement as well as the dominant grip of imposed infrastructures and industrial arrangements.

Furthermore, the Dutch mobility sector is interesting in terms of governance and 'transition politics'. The Netherlands are known for a tradition in 'spatial planning' and the corporatist 'polder model', and have recently experienced several transformative developments related to privatization and infrastructure. In the past decade, political debates reached high levels of controversy over infrastructure projects, proposals for pricing policies, and environmental regulations. Although mobility was 'integrated' with spatial planning in policy documents, different government departments continued to have fierce disagreements over spatial planning, environment, and transport. When the concepts of 'transition' and 'transition management' were introduced in the *4th Dutch National Environmental Policy Plan* in 2001, the 'transition to sustainable mobility' was explicitly mentioned as one of the four 'necessary transitions'. In 2004 and 2005 the first version of the governmental *Mobility policy plan* presented 'transition management' as a strategy to 'achieve sustainable mobility for the long-term' and 'innovation programs for the short-term'. Subsequently, various programs and projects were set up and funded in the name of this 'transition to sustainable mobility' (Avelino & Kemp 2009).

On the one hand, as will be discussed in this thesis, the Dutch mobility sector is believed to 'lag behind' other sectors such as energy, agriculture, and water management, in the sense that actors struggle with the creation of 'sustainability visions' in mobility, more so than in other policy fields. On the other hand, the mobility sector is one of the sectors in which 'transitions' and 'sustainability' are most advocated, discussed, and studied. Various researchers have studied transitions to sustainable mobility (Geels 2005, Geels et al. 2012, Hoogma et al. 2002, Verbeek 2009, Dijk 2010) and transition programs in the Dutch mobility sector (Avelino 2009, Van den Bosch 2010, Bressers et al. 2011, Avelino et al. 2011, Kemp et al. 2011). In many of these programs, transition management and sustainability ambitions were inserted at later stages of ongoing processes, with varying levels of success. This research studies four cases that zoom in on particular groups of actors who are trying to transform the Dutch mobility sector: the *Transumo program*, the *A15-project*, the *innovation program Sustainable Logistics* and the *South Wing transition project*. Beside their different functional and geographical levels, these cases also represent different system definitions, actor-constellations, and strategies towards 'the transition to sustainable mobility'. Transition management and sustainability ambitions

played a role in all the cases, but to different extents and in distinct ways. These cases allow the researcher to analyze different manifestations of power in transition politics, including processes of strategic interpretation and definitional power.

1.4. RESEARCH QUESTIONS AND THE STRUCTURE OF THIS DISSERTATION

This dissertation is focused on the role of power in sustainability transitions and asks the following research questions, which will be answered in three different book parts:

What is the role of power in sustainability transitions, and what does this mean for transition management?

Sub-questions:

1. *How can the role of power and sustainability transitions be studied?* Part I
2. *How do power and sustainability transitions interact in practice?* Part II
3. *How can the role of power in sustainability transitions be theorised?* Part III a
4. *How can power be integrated into the transition management model?* Part III b

Part I / research question 1: Concepts & Methods

The first question – *how can the role of power in sustainability transitions be studied* – is addressed in Part I (chapters 2 and 3), which provides the epistemological and conceptual basis of this research. As will be explained in chapter 2, this dissertation is based on an *interpretative* approach to social science and an *explorative* research design. Rather than starting with predefined hypotheses, the purpose is to *generate* hypotheses based on both empirical observations and theoretical discussion in reference to existing literature. Moreover, rather than aiming for positivistic scientific criteria such as ‘external validity’, ‘generalizability’, or ‘falsification’, this thesis is based on criteria of scientific quality that underlie the *interpretative* research paradigm, such as ‘triangulation’, ‘reflexivity’, ‘thick description’ and ‘phronesis’. In addition to the analytical ambition of gaining improved understanding of power in transition, I also strive for action research goals, i.e. using insights to empower practitioners to reach their transformative sustainability ambitions. In addition to epistemological discussions on the purpose of social science research, chapter 2 will provide a detailed account of the research methods used for data-collection (ethnography, participant observation, action research, interviews and document reviews), case-selection and data-analysis (discourse analysis, deconstruction and narrative analysis). Moreover, I will explain and justify how I answer each of the research questions, and how I use empirical observations to ‘theorize’ power in transition and to ‘empower’ transition management.

Chapter 3 will provide a state-of-the-art review of transition studies, focusing on how the issue of power is dealt with. Then I will discuss the main concepts and points of contention in the state-of-the-art literature on power and empowerment, as found in several social science disciplines: political science, sociology and organization studies.

Based on these reviews, I discuss what are the remaining challenges for the conceptualization of power in relation to change, and why a *new* conceptualization of power is necessary. I will conclude that there is a gap in the power literature regarding the (explicit) conceptualization and acknowledgement of power as a *transformative capacity*. As such, I will develop a conceptual power framework which, while including many of the concepts and insights in the existing literature, also proposes some additional concepts, new elements, and alternative typologies. Therein I will approach power as a ‘family resemblance concept’ and develop a context-specific conceptual power language that is suitable for transition research. At the end of chapter 3, I specify how the conceptual power framework will be used for interpretative, empirical analysis.

Part II / research question 2: Empirical Observations

The second part of this dissertation covers the empirical observations and mainly addresses research question 2; *how do power and sustainability transitions interact in practice?* The answer to that question is explored in four case-studies, in the empirical chapters and in the intermezzos. In the chapters the case-studies are analyzed by using the conceptual power framework to ask predefined questions about a clearly delineated group of actors who aim to transform a clearly delineated subsystem of the Dutch mobility system. The intermezzos allow exploration of additional questions on discursive power and action research. Part II will start with an intermezzo on *Transition Discourse and Sustainable Mobility* in which I explore how transition discourse is used within and beyond the Dutch mobility sector. This intermezzo serves to contextualize the selected case-studies in their wider discursive and political context.

Subsequently four cases (the *Transumo-program*, the *A15-project*, the innovation program *Sustainable Logistics* and the *South Wing transition project*) are analyzed in three separate chapters (4, 5, and 6) and one intermezzo. The empirical chapters will involve an in-depth discussion of power dynamics and (dis)empowerment processes as observed within the cases; in particular as observed in how the involved practitioners approached sustainability ambitions, and in how they attempted to apply transition management ideas. At the beginning of each empirical chapter I will also discuss my own role in the projects and programs under study in that chapter. Part II ends with an intermezzo on *Power, Mobility and Space in the South Wing Region*, which serves to explore the role of power beyond the conceptual framework, and beyond the transport sector, by discussing (transition) discourses on spatial planning.

Part III / research questions 3 and 4: Theory & Tools

The third part of this thesis is dedicated to ‘theorizing’ power in transition (chapter 7) and ‘empowering’ transition management (chapter 8), thereby answering research questions 3 and 4. Chapter 7 will employ empirical observations and additional literature on sustainability, power and transitions, in order to theorize the role of power in sustainability transitions. An analytical power-in-transition framework is developed to research empirical phenomena so as to gain further understanding on power in sustainability transitions. As will be explained in chapter 2 this occurs partly deductively

and partly inductively. Chapter 7 starts by deductively translating some basic transition concepts in explicit power terms, in reference to the conceptual power framework presented in chapter 3. I then use the empirical insights of part II, in combination with relevant literature, to discuss, broaden, and deepen some conceptual and theoretical dilemmas, such as the concept of 'systemic power' and 'discursive power', the distinction between 'radical' and 'moderate', 'passive' and 'active' exercise of power, and ethical perspectives on power. While discussing these issues I will reconsider and elaborate the initial reconceptualization of transition concepts, and propose some additional concepts. I will use these concepts to formulate hypotheses on power in transition. Finally, I will present an analytical framework to study power in transition, which integrates the various concepts and can be used to further 'test' or 'interpret' the hypotheses. Therein I also specify how the power-in-transition framework can be used for future empirical analysis.

Chapter 8 aims to increase the empowering potential of transition management by integrating insights on power and empowerment in the prescriptive transition management model. First, empirical lessons on transition management are discussed in reference to the case-studies. Second, basic power and empowerment principles are formulated, based upon the empirical lessons and upon the insights and hypotheses formulated in the previous chapter. The hypotheses on power-in-transition as formulated in chapter 7 will be translated into process principles and management suggestions. Third, these principles are operationalized in a participatory 'power tool' and 'empowerment tool', and I specify how these tools can be used in a transition management process. The aim of these tools is to empower practitioners in their transformative activities, while at the same time promoting awareness of and reflection upon the possible perverse effects of power in relation to transformative politics and sustainability discourses.

Conclusion: answers to main research questions and scientific contributions

In the conclusion I will recapitulate and synthesize the insights in the chapters by formulating answers to the research questions and by specifying the main scientific contributions of this thesis - not only to transition studies, but also to social power theory, sustainability governance, and sustainability science more generally. Finally, I will discuss challenges for future research, where I will also present a research agenda for the future, and specify how I plan to use the outcomes of this dissertation for such future empirical research. Synthesizing the insights of my research, in this book, has been quite a challenge, due to its explorative, interpretative, interdisciplinary, 'interparadigmatic' and 'transdisciplinary' nature. This process has included; 1) going back-and-forth between conceptualization, observation and theory; 2) drawing upon various sources of literature (on power, empowerment, transition and sustainability); 3) providing a thick description of cases; 4) presenting an analytical power-in-transition framework; and, 5) formulating some management principles and participatory tools. In the concluding chapter, I aim to recapitulate this process as concisely, yet as accurately as possible. The conclusion has been written in such a way that the reader may *start* by reading the conclusion, and, when particular concepts, claims and propositions raise questions, one can look up the underlying arguments and observations within the individual chapters.

PART I

CONCEPTS & METHODS

CHAPTER 2.

Epistemology and Research Methodology

This chapter provides the epistemological and methodological grounding of this research. First, I discuss how the literature on transition (management) can be positioned in epistemological terms, and how I position myself in that regard. Second, I present the overall research set-up, characterizing it as an *explorative* and *interpretative* research design. Third, I discuss the research methods used for *data-collection* and *case-selection*, and fourth the research methods used for *data-analysis*. Last but not least, I explain how research insights are used for theorizing power in transition, and for empowering the transition management framework.

In its most general sense, power is (...) the 'can' which mediates the desired or intended outcomes of social actors and the actual realization of these outcomes in their daily social practices.

Davis et al. [1991]2002:214

2.1. EPISTEMOLOGICAL POSITIONING: DECONSTRUCTION AND RECONSTRUCTION

The critical discussions on transition management (see introduction, section 1.2.1) relate to different epistemological viewpoints on what social science is or should be, and the extent to which it can or should be intertwined with the politics of social transformation. In this section I address some of these epistemological issues. The field of transition studies explicitly parts with the positivistic paradigm and starts off with the premise that the relations under study cannot be reduced to mono-disciplinary, linear causal models, that we need to accept uncertainty and acknowledge the process of up- and downscaling between different levels in time, space, and aggregation, and that scale-dependence and the approach to deal with it varies for every specific case or issue (ICIS 1999). More specifically, transition research is based on the so-called complexity paradigm (De Haan & Rotmans 2011, Loorbach and Rotmans 2010a).

2.1.1. *Complexity, postmodernism and deconstruction*

The complexity paradigm, which originates in mathematical studies of organic systems, has entered the field of social studies, including theories on governance and leadership (e.g. Marion & Uhl-Bien 2003, Pel 2011). Different manifestations of the complexity paradigm have in common that they address systems that ‘exhibit behavior that is not simply, or not at all, reducible to the interactions at the level of the system’s composing parts’ (De Haan 2010). There are certain phenomena that we cannot explain by accumulating all the underlying interactions. An example of such ‘complex phenomenon’ is the traffic jam; we cannot explain nor predict a traffic jam by simply summing up the separate characteristics and behaviors of the road, the cars, and the drivers. Weather circumstances, an accident, or even just one dreamy woman behind the steering wheel, can trigger a traffic jam, even if one would not expect this on the basis of the total amount of cars per square meters. A small and seemingly irrelevant detail can trigger more than an entire army, also metaphorically referred to as the ‘butterfly effect’.

The complexity paradigm views society as consisting of various ‘complex adaptive systems’. Not only are the internal dynamics of these systems ‘complex’, this complexity is increased as these systems are also ‘open’ in terms of interacting with, and adapting to, their surrounding. In transition studies, this complex adaptive system perspective is believed to “provide the necessary framework that allows us to include all characteristics of societal complexity, such as heterogeneous agents and artifacts, dualism and structures, emergence, surprise, and uncertainty” and to therefore be “very adequate to describe and analyze societal systems, while building on insight from sociology” (Loorbach 2007:64). Complexity theory is also believed to be an appropriate basis for governance, and used as a basis for transition management. It is believed that “greater insight into the dynamics of a complex adaptive systems leads to improved insight into the feasibility of directing it”, and that “the application of complexity theory can be used to direct complex, adaptive systems” and to transform “a complex adaptive system from one state to another” (Rotmans 2005:34, see also Loorbach & Rotmans 2010a).

Some authors have addressed the links between the complexity paradigm, postmodernism, and deconstruction (Cilliers 2005, Strand 2002). Commonalities between these approaches are the acknowledgement of uncertainty and the belief that our knowledge about societal systems is limited. Cilliers points out that Derrida (the ‘founder’ of deconstruction) has explicitly linked the fact that things are complex to the problems of meaning and context: deconstruction argues that “meaning and knowledge cannot be fixed in a representational way, but are always contingent and contextual” and that “the context itself is not transparent, but has to be interpreted” (2005:25). Cilliers responds to some of the misconceptions about complexity, postmodernism, and deconstruction (e.g. that it necessarily leads to relativism), and concludes that the acknowledgment of complexity does *not* need to result in vague or relativistic statements, but rather in a modest position towards knowledge; “we can make strong claims, but since these claims are limited, we have to be modest about them” (2005:263).

With regard to governance, the complexity paradigm challenges the “belief in the strategy of reducing practical problems to a set of technical problems” and contends that we need to be critical and reflexive on how our understanding of complexity “affects and should affect our ideological basis for governance” (Strand 2002:164). So far, these views overlap with the basis of transition management. However, the postmodern view on complexity goes one step further, as it contends that “the implication faithful to complex systems theory is *not* the question ‘how can I govern the system into a new attractor (desired by me)?’ but rather; ‘what is my role in this system, and how does the action of me and others affect the system?’” (Stacey 2000 in Strand 2002:176, *emphasis added*). As such, scholars subscribing to postmodernism are typically critical of the belief underlying transition management that we can or should ‘steer’ complex societal system towards a more desirable state.

Shove and Walker, for instance, question the assumption that “better understanding will necessarily enhance the capacity to manage”, and criticize the “very idea of transition management (...) that deliberate intervention in pursuit of specific goals, like those of sustainability, is possible and potentially effective” (2007:764). Even though transition management literature starts off from the premise that society cannot be steered or remade through demand-and-control models, and even though it acknowledges that “any focus on a societal system or subsystem is (...) arbitrary” and that “there are no objective borders between sub-systems” (Loorbach 2007: 65), it still maintains that it is possible and desirable to analyze the dynamic mechanisms of complex societal systems and to use such analysis to (help) steer societal systems towards a desirable end state. Transition management literature therefore inherently differs from postmodern views and can be said to position itself *in between* different “perspectives on pluralism as different viewpoints that constitute a spectrum between positivism and constructivist pluralism” (van Asselt 2000:212). In that regard, the epistemological basis of transition management has commonalities with critical realism (Bhaskar 1979), which holds the position that there exists a mind-independent reality, whilst acknowledging the pluralism of perceptions and cognitions of this reality.

Even though transition research does not subscribe to postmodernism, some of the qualitative research methods that developed from the postmodern tradition are maintained to be necessary to study the social realm and its perceptions, language, and discourse, as “undercurrent and related seeds of transitional change” (Rotmans & Kemp, 2008:1008). While this allows for methodological pluralism, it still leaves the question to what extent it is appropriate to use the resulting analysis as an instrument for social transformation. In that regard, transition management literature refers to “the switch from mode-1 to mode-2 scholarship” as postulated by Gibbons et al. (1994), and contends that scientists are not only responsible for their accomplishments in “the scientific arena where they belong”, but that they are “active in other arenas as well, which makes them responsible and accountable for other activities, such as their role in societal change processes” (Rotmans 2005:20). As such, in transition management studies, it is *not* enough to merely ask “what is my role in this system, and how does the action of me and others affect the system” (as proposed by Stacey 2000: in Strand 2002:176). One *also* has to ask how this role of researchers, and their effects on the system, can be *improved* in such a way that it can contribute to societal improvement.

2.1.2. Deconstructing deconstructive discourses on transition management

This epistemological positioning has several implications for the study of power. From a postmodern point of view, one way to go about this research would be to ‘deconstruct’ transition management, critically discussing underlying assumptions and thereby unraveling its discursive power. Deconstruction, a term coined by Derrida ([1967]1978), originally started as a philosophical approach to reading text, and then moved on to “take a life of its own (...) [as] it moved beyond the realm of ‘philosophy proper’ to permeate the discourse of the humanities and the social sciences, and eventually it settled into the common parlance of popular culture” (Gilbert-Walsh 2008:317). According to Derrida, a deconstructive approach “cannot exist” (Weitzner 2007:43), much to the confusion of those trying to apply a deconstructive approach. Derrida simply refused to define deconstruction, claiming that “all sentences of the type ‘deconstruction is X’ or ‘deconstruction is not X’ *a priori* miss the point, which is to say they are at the least false” (Gilbert Walsh 2008:318). Luckily, Derrida does expand elaborately on what deconstruction *does*, namely it “interrupts a construction” (ibid:319). Such ‘interruption of constructions’ has gained popularity in postmodernist traditions and in discursive analyses based on authors such as Foucault. The task of deconstruction is to “negate the *illusion* of coherence, to expose how texts, when read carefully, deconstruct themselves and thereby reveal their lack of positive content” (Gilbert-Walsh, 2008:321).

There is no lack of ‘easy targets’ to ‘deconstruct’ in the transition management literature. In fact, some of the critiques written on transition management, particularly those by Shove & Walker (2007, 2008) and by Duinveld cum suis (2007), are essentially based on *deconstructing* transition management literature: taking concepts and claims underlying transition management, highlighting hidden contradictions or assumptions, and begging clarifications (which can then be further deconstructed). Duinveld et al., for instance, have taken the following figure from the transition management literature:

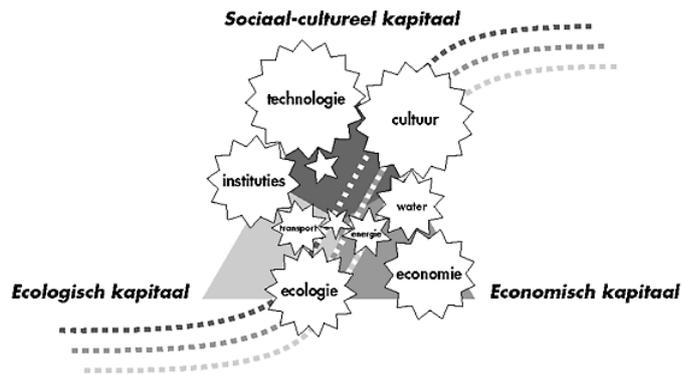


Figure 1. Visualization of 'transitions as mutually enforcing societal radars' (Rotmans 2003:14)

Having found this figure, the authors subsequently claim that this depiction of societal processes as radars 'illustrates' how transition management is based on a 'technocratic, mechanistic view of society'. To a certain extent, such deconstructive exercises are a valuable form of scientific dialogue, as they demand attention to elements that have remained understudied (such as power), and challenge researchers to be clear and modest in their claims. However, while 'deconstructing' transition management, one may meanwhile also 'construct' and reinforce one's own epistemological and ontological (dis)beliefs and assumptions with regard to the possibility of using research as input for societal improvement. Illustrative examples in this regard are:

The more we think about the politics and practicalities of reflexive transition management, the more complex the process appears: for a policy audience, our words of caution could be read as an invitation to abandon the whole endeavour. If agency, predictability, and legitimacy are as limited as we have suggested, this might be the only sensible conclusion (Shove & Walker 2007:768)

A more important, more general function of process analysis is the production of 'negative suggestions' or deconstructions (...) There is no point in investing much time and money in research that produces [policy] instruments as results of research. 'Negative' suggestions can thus spare much energy, money and other capital, by mapping out the limits of manageability³ beforehand (Duineveld et al. 2007:33, translated from Dutch by F.A.).

If we are to deconstruct transition management, it would be consistent to also deconstruct the *reactions* to transition management, such as the two texts above. One could for example point out that the first text actually *prescribes* that 'policy-makers *should* abandon the whole endeavor of reflexive transition management' (rhetorically formulated as 'they could read this as an invitation to' and 'this might be the only sensible conclusion'). As for the second text, one could point out that it *prescribes* that 'negative policy suggestions are *a priori* more effective than positive policy suggestions' (rhetorically formulated as negative research claims being 'just suggestions' and positive research claims being 'instruments'). Once the underlying statements of these texts are unraveled, one could do the same for other pieces of texts belonging to the respective articles,

³ Manageability is the chosen translation for the Dutch word 'maakbaarheid', literally 'make-ability'

subsequently moving on to deconstruct entire articles in terms of demonstrating their underlying presupposed dualities, hierarchical oppositions, preconceived assumptions, and self-referential contradictions (such as the idea that agency and governmentality are 'illusions' while power and social construction are 'real'). One could then move on to extend this endeavor towards all sorts of texts that are written or cited in critical reference to transition management. A good text to start with would be:

The critique of the inanities and injustices of present society, however obvious they may be, is disqualified by a simple reminder that remaking society by design may only make it worse than it is. Alternative ends are invalidated on the strength of the proved ineffectuality of means (Bauman 1991, quoted in: Shove & Walker 2007:763).

One could dedicate an entire dissertation to the deconstruction of this text and its many hidden presuppositions, such as the suggestion that 'remaking society by design' is the *only* means to deal with the inanities and injustices of present society, and that this should 'disqualify' critique or 'invalidate' alternative ends. However, rather than deconstructing texts written by other researchers, this dissertation aims to analyze policy and political practices. If deconstruction is an ambition at all, this dissertation starts off from the premise that the challenge for social scientists, and for political scientists in particular, is to deconstruct the ideas that underlie political behavior. As Duineveld et al. state:

Analyses of societal, political, and policy processes can be used to specify the hidden assumptions, problems and undesired effects of policy (Wildavsky, 1979). [These analyses] can be used as ways to make the thoughts and actions of people and institutions into an object of continuous criticism. That, according to us, may well be the most important step for reflection and for change. Without criticism, policy gets tangled up in its own ways of thinking. Dryzek wrote that 'Resistance is fertile', thereby emphasizing that criticism and resistance are necessary to trigger (institutional) change. It is exactly that from which scientific research on (policy) processes can exert its non-scientific use and legitimacy (Duineveld et al. 2007:34, *translated from Dutch by F.A.*).

Following this argument, it is more 'legitimate' for policy researchers to deconstruct those very 'hidden assumptions, problems, and undesired effects of policy', than it is to deconstruct the writings of other policy researchers. As pointed out by Derrida, deconstruction serves to 'interrupt a construction'. Interestingly, transition management is based on doing exactly that: 'interrupting' the 'construction' of regimes, by deconstructing the underlying paradigms of regimes and their grip on societal systems. And sure, such 'regime deconstruction' goes far beyond a mere academic exercise and results into instrumental suggestions that, at times, serve to construct 'new regimes' that are believed to be 'better' by those who apply them. But still, the starting point of transition management, and of transition studies more generally, is the critical deconstruction of existing regimes. Instead of merely 'interrupting the construction' of a new study field that specifically aims for 'reflection and change', it would be more constructive *and* meaningfully deconstructive, to explore how this new field of transition studies can *help* analysts to deconstruct 'hidden assumptions, problems, and undesired effects of policy'. This is one of the challenges that this dissertation adheres to.

2.1.3. Beyond deconstruction and beyond 'is' versus 'ought'

While deconstruction will play an important role throughout this research – in terms of deconstructing observed discourses on sustainability, power, transitions and transition management – I explicitly aim to go *beyond* deconstruction, by adding an approach that I call 'reconstructive'. After deconstructing existing discourses – both scientific and political – I will move on to 'reconstruct' a discourse on power in transition that I argue to be more adequate to deal with both scientific and political challenges, including an analytical framework on power in transition, as well as instrumental process principles for transition management. As such, I do not only aim to understand or explain power in transition, but I explicitly strive to critique and change the way in which power in transition is manifested and dealt with, and to offer specific recommendations on how people can be empowered to enable sustainability transitions.

To some readers, there might seem to be a contradiction between this 'reconstructive' ambition on the one hand, and the 'deconstructive' approach on the other hand. This relates to one of the most fundamental debates in social science; between those that aim to 'describe' and 'explain', and those that wish to 'prescribe' and 'predict', between those that call for an understanding of how things 'are', and those that emphasize the understanding of how things 'ought to be'. Critical social theory has predominantly occupied itself with the latter, openly defining its purpose as social research for social improvement. In the past decade various social scientists have challenged the Enlightenment paradigm as inspired by authors such as Kant and Habermas, and called for a re-appreciation of insights offered by Machiavelli, Nietzsche, and Foucault (Flyvbjerg 2005, 2001, Bruclesby & Cummings 1996). Bruclesby and Cummings have proposed a shift from Habermas to Foucault as 'an alternative underpinning of critical social theory', emphasizing the advantage of understanding how things 'are' instead of focusing on how they 'should be'.

In an attempt to break through this 'is-versus-ought' thinking, I argue that the study of power in transition is not only about studying how things 'are' at a specific point in time, nor about how they 'ought to be'. Rather, it is also, and primarily, about studying how things *can be*, now, in the near future, and in the long-term. This is particularly relevant for the notion of power, for it is power that provides us with that which 'can be':

In its most general sense, power is (...) the 'can' which mediates the desired or intended outcomes of social actors and the actual realization of these outcomes in their daily social practices. (Davis et al. [1991]2002:214)

In that light, the challenge is to approach the notion of power in terms of *transformative capacity*, i.e. the human ability to change what 'is' in to that which he or she thinks 'ought to be'. In its broadest sense, transition research is all about studying how things *can be*, and transition management is about trying to operationalize a 'can-be-philosophy' in a political context dominated by 'is-versus-ought' debates. However, in order to approach 'what can be' in a scientific and systematic manner – to move beyond mere speculation or fantasy – it is obviously necessary to *combine* the study of how things 'are' with the study

of how people think things ‘ought to be’. This is where epistemological debates come in. I argue that when we are faced with inherent ‘can be’ questions – e.g. long-term transition processes and complex sustainability issues – we cannot afford to ‘choose sides’ between ‘is’ versus ‘ought’ approaches to science. Rather, we need to combine different epistemological paradigms and explore the whole spectrum of what was, what is, what seems to be, what people want, and what we think that will be or ought to be. For that we need both deconstruction and reconstruction, both qualitative and quantitative research, both positivistic and postpositivistic paradigms.

As such, even though I draw on the interpretative research tradition in terms of most of my own research design and applied research methods (see section 2.2.2), I do *not* denounce positivistic research, nor do I distance myself from instrumental management recommendations to try and change society for the better. On the contrary, I aim to formulate my research insights in such way that they can also contribute to positivistic and instrumental social science research. Thereby I refuse to disclose or hide myself in any epistemic ‘box’, be it positivism or poststructuralism, critical theory, mode-I or mode-II science. I believe that any interested researcher from any epistemic community should be able to question my work on his or her own grounds, be it by ‘deconstructing’, ‘falsifying’ or ‘critiquing’ any of my research insights and theoretical propositions.

2.2. OVERALL RESEARCH DESIGN

2.2.1. An explorative research design oriented to sustainability research

At the time when this research was started, transition studies did not yet include an explicit conceptualization of power. As such it was necessary to make use of an *explorative* research design. Rather than ‘testing’ predefined hypotheses, the aim is to ‘generate’ hypotheses on the role of power in sustainability transitions, and to provide an analytical framework on how to research this role. The first challenge in exploring the role of power in sustainability transition is a *conceptual* one. Linking the notions of ‘power’, ‘sustainability’, and ‘transitions’, presents us with a complicated philosophical problem. While ‘sustainability’ is an *essentially contested* notion, ‘power’ can be viewed as a so-called *family resemblance* concept (to be elaborated later on), meaning that both notions cannot be generically captured in all-encompassing definitions. In addition, the concept of ‘transition’ implies a *long-term and systemic view of societal transformation*, which cannot be translated in terms of linear causalities. Therefore the challenge is to explore how a family resemblance concept such as ‘power’ can be conceptualized in relation to such an inherently contested and complex notion as ‘sustainability transitions’.

The notion of sustainability is a typical ‘essentially contested notion’, one of those concepts which “inevitably involve endless disputes about their proper uses on the part of their users”, and “to engage in such disputes is itself to engage in politics” (Lukes [1974] 2002:45). Transition researchers approach sustainable development as a concept that is intrinsically complex, normative, subjective, and ambiguous (Kasemir et al. 2003, Rotmans 2005). Even though there is no agreed upon definition of sustainability, there are still some basic features that characterize the concept; it is an intergenerational phenomenon,

it operates at multiple scale levels, and it covers social-cultural, economic, and ecological dimensions. The literature on transition management refers to the paradigm of *Integrated Sustainability Assessment* (Weaver and Rotmans 2006, Weaver et al. 2008), which argues that the study of sustainable development requires *integrated* systems analysis embedded in a *participatory* process context, thus involving both ‘interdisciplinary’ and ‘transdisciplinary’ research. Following those arguments, I argue that a conceptualization of power – in order to be suitable for sustainability research - requires basic ‘analytical criteria’ that are inherent to sustainability research. Inspired by *Integrated Sustainability Assessment*, I characterize these analytical criteria as follows:

Analytical criteria for sustainability research	
Interdisciplinary	acknowledging the interaction between technological, political, socio-cultural, ecological, and economic processes to understand empirical phenomena
Interparadigmatic	acknowledging that <i>both</i> positivist science (i.e. ‘physical facts, numbers, and statistics’) <i>and</i> constructivist analysis (i.e. ‘values, discourse, and perceptions’) contribute to our understanding of empirical phenomena, even if we focus on one of them in a particular research endeavor
Transdisciplinary	acknowledging that understanding social phenomena cannot solely come from academics, but needs to involve the experience and tacit knowledge of practitioners at various levels
Intergenerational	acknowledging the dimension of time in social reality, i.e. that social processes are subject to an interplay between short-term and long-term change and stability, and that these dynamics can cover various generations
Multi-level	acknowledging that social phenomena can only be understood through the <i>interaction</i> between individual, organizational, regional, national, global, and systemic levels

Table 1. Analytical criteria for sustainability research

As such the challenge is to conceptualize and operationalize the notion of power in such a way that it can be used in the context of interdisciplinary, interparadigmatic, transdisciplinary, intergenerational, and multi-level research. In chapter 3 I will take up this challenge. As we will see, this is particularly tricky because - like sustainability - the notion of power also has no agreed upon definition. While Lukes has argued that power is also an ‘essentially contested notion’ (Lukes 1974), I follow Haugaard’s (2002) view that power is rather a ‘family resemblance concept’, as introduced in Wittgenstein’s philosophy of language⁴. Any attempt to capture the ‘essence’ of the word will exclude aspects that might be essential in a given context. Therefore, rather than trying to capture the essence of a ‘family resemblance concept’ in an all-encompassing definition, the

⁴ A typical example of a ‘family resemblance concept’ is the word ‘game’: its meaning inherently depends on the context in which it is used. The ‘playfulness’ of a card game played at home starkly contradicts with the ‘seriousness’ of a political game. All possible meanings of the word ‘game’ partly overlap and partly contradict each other, hence making it impossible to agree on *one* all-encompassing definition.

challenge is to find or construct a local language that is suitable to describe phenomena in a specific context. This is exactly what chapter 3 will provide: a conceptual power language that can be used in the specific context of transition research, first by carefully considering the different ‘family members’ of the power concept as discussed in social science literature, and second, by proposing some adaptations and new notions to the conceptualization of power, so as to fulfill the ‘analytical criteria’ identified above.

However, exploring the role of power in sustainability transitions cannot be pursued through a merely conceptual exercise. Rather, the relation between power and sustainability transitions needs to (also) be informed by empirical observations on how actors with transformative sustainability ambitions (try to) exercise power to achieve their goal. As such, the power conceptualization presented in chapter 3 will be operationalized in terms of specific research questions to be asked about empirical observations. These questions will then be used to analyze case-studies, and subsequently the gained empirical insights are used to *reconsider* the power conceptualization. The rest of this chapter specifies how exactly I do all this, and through which research methods.

2.2.2. Interpretative research: thick description, reflexivity, triangulation, phronesis

My methodology draws on the interpretative research paradigm (Yanow & Schwartz-Shea 2006). This interpretative paradigm covers a variety of research methods, including (amongst others); action research, case study analysis, deconstruction, discourse analysis, ethnography, participant observation, and phenomenological research (ibid:xx). This dissertation makes use of all these methods, but before specifying those (see section 2.3.), I first want to discuss the interpretative research paradigm more generally. Interpretative research is inherently ‘postpositivistic’, in the sense that it questions the (neo)positivistic approach to social science, which is based on the presumption that the social world can be analyzed in similar ways as the physical world. Interpretative research parts with that assumption and focuses on studying, i.e. ‘interpreting’, the multiplicity of meaning as constructed in language and actions:

We are meaning making creatures. Our institutions, our policies, our language, our ceremonies are human creations, not objects independent of us. And so a human (or social) science needs to be able to address what is meaningful to people in the social situation under study. It is this focus on *meaning*, and the implications of that focus, that the various interpretative methods share (Yanow 2006:9, emphasis added).

Despite of the differences and disagreements between the interpretative approach and the (neo)positivist approach, there are still some basic agreements, those being “two scientific attributes of scientific practice (...): an attitude of doubt, and a procedural systematicity” (Yanow 2006:9). The main difference lies in the way in which such ‘doubt’ and ‘procedural systematicity’ are enacted. While the (neo)positivistic tradition tends to judge the quality of a scientific study in terms of ‘falsifiability’, ‘internal and external validity’, and ‘generalizability’, the interpretative tradition refers to different evaluative criteria of scientific quality, including notions such as ‘thick description’, ‘reflexivity’, and ‘triangulation’ (Schwartz-Shea 2006).

Thick description is a form of safeguarding ‘transferability’, that can be seen as an alternative to ‘external validity’ or ‘generalizability’ (ibid:109). The term ‘thick description’ originates in anthropology and was used by Geertz (1973) to describe his method of doing ethnography. Essentially, thick description refers to an observer not just describing a particular behavior, but also the *social context* of that behavior, so that the behavior attains a meaning that can also be understood and interpreted by an outsider. A famous example is ‘the wink’; in order to understand the meaning of someone winking, it is not enough to just describe the act of eye twitching (‘thin description), but one must also explain the symbolic value of winking in the specific cultural context (‘thick description’). While the empirical observations in this dissertation are not anthropological and not focused on explaining the cultural and symbolic meaning of human behavior, they do adhere to thick description in a *political* sense. Extensive efforts are made to convey the *political context* in which observed actors say or do things. For instance, observations on what particular actors said about ‘sustainability transitions’, at a particular moment in a specific project context, are contextualized in a wider political discourse on sustainability transitions.

Another important criterion of scientific quality, as emphasized in both interpretative research and transitions studies, is *reflexivity*, i.e. acknowledging the recursive relation between interpretation and the object of observation, and thus reflecting on one’s own interpretation and role in (research) processes. While ‘epistemological reflexivity’ is primarily a subject of this particular chapter, ‘personal reflexivity’ will run through the entire dissertation, especially in the empirical chapters, in which I will always discuss my own role and involvement in the projects, programs, and networks under study. For reflexivity “requires an awareness of the researcher’s contribution to the construction of meanings throughout the research process, and an acknowledgment of the impossibility of remaining ‘outside of’ one’s subject matter while conducting research” (Nightingale and Cromby 1999:228). Such reflexivity is also manifested in the explicit use of the first pronoun ‘I’, because; “researchers cannot expect to hide behind “third-person”, omniscient exposition – the so-called view from nowhere” (Schwartz-Shea 2006:103). In transition studies, reflexivity is not only treated as an epistemological issue but also as an ontological phenomenon, in terms of acknowledging that policy actors under study are themselves ‘reflexive’. Transition management is positioned as a form of ‘reflexive governance’ that aims to explicitly integrate reflexivity in policy processes (Kemp & Loorbach 2006, Grin 2010, Voss et al. 2006). In this research, actors under study are thus treated as being ‘reflexive’, in the sense that rather than describing them as ‘flat characters’ who say or do certain things, it is also discussed how these actors reflect on, and subsequently adapt, their own interpretations and actions.

Triangulation is the third criterion of scientific quality that I adhere to. Triangulation is a way of safeguarding ‘trustworthiness’ and ‘multidimensionality’ in a research project, by using a diversity of means to understand the phenomena under study. This ranges from using multiple analytical tools to multiple methods of data-collection, as well as involving multiple researchers, and/or making use of multiple theories or paradigms (Schwartz-Shea 2006:102). In this dissertation I make use of all these forms of triangulation. First and foremost, as will be specified in sections 2.3 and 2.4, I combine multiple methods of data-

collection and data-analysis. Second, I draw on several theories (transition theory, discourse theory, and multiple power and empowerment theories), and I strive to formulate and communicate my conceptualizations, analytical frameworks, and theoretical propositions in such a way that they can be used in an 'interdisciplinary' and 'interparadigmatic' research context. Third, I have cooperated with many other researchers, not only in terms of co-authoring papers and chapters, but also in terms of interpreting empirical observations (Avelino & Kemp 2009), conceptualizing power in transition (Avelino & Rotmans 2009, 2011), analyzing the mobility sector (Zijlstra & Avelino 2011, Avelino et al. 2007, 2011), cooperating in the collection of data through action research, interviews and phenomenology (Bressers et al. 2011, Van Eijndhoven et al. 2009, Te Riele et al. 2008, Avelino et al. 2008, Minnesma et al. 2007, Avelino & Rotmans 2007), and exploring new empirical topics beyond the initial focus of this research (Avelino & Kunze 2009). These interactions with other researchers have greatly influenced my research project, and will be referred to throughout the chapters.

Last but not least, another principle adhered to is *phronesis*, a concept variously translated as practical wisdom, practical judgment, common sense, or prudence⁵. Phronesis is contrasted with pure scientific knowledge (*episteme*) and technical knowledge (*techne*), by involving values and "the art of judgment" (Flyvbjerg 2004:284). In an attempt to 'making social science matter', Flyvbjerg (2001, 2004) calls upon social scientists to dare make normative judgments on the basis of their observations, especially regarding power relations underlying planning practices and the question of who wins or loses. In this spirit of phronesis, 'empowerment' and 'sustainability' are taken as an explicit normative orientation for this dissertation. Having, and admitting to have, such normative orientation can also be related to interpretative research:

much of the work to date in interpretative policy analysis (...) appears to be motivated by a desire not only to explain agency performance, but to make it more just, more equitable, more effective. Several theorists (...) argue, further, that interpretative analysis presupposes or requires an ethical commitment to a more democratic policy process and analysis (Yanow, 2006:22).

This also relates to the so-called 'argumentative' or 'deliberative' turn in policy analysis (Fischer 2007). Like other interpretative approaches, argumentative policy analysis challenges to 'myth' of 'value-neutral' policy analysis. Related to that, it aims to move beyond technocratic policy analyses which ultimately serve the interests of policy-makers, by explicitly and critically considering the implications of policy for citizens:

Beyond serving the needs of administrative policy makers, the deliberative practitioner seeks to represent a wider range of interests, arguments and discourses in the analytical process. This is done in part by emphasizing citizen participation, including the examination of the ways in which citizens' interests are discursively constructed, as well as how they come to hold specific interests. (...) policy analysts help decision makers and citizens develop alternatives that speak to their own needs and interests, rather than those defined and shaped for them by others (Fischer 2007:225).

⁵ The phronesis concept has been elaborated by e.g. Flyvbjerg (2001, 2004), Loeber (2004)

The empowerment of citizens will be a recurring theme throughout this research, both in the empirical chapters and in the theoretical discussion thereof. I will argue why I believe empowerment to be a more appropriate concept than ‘participation’, and I critically scrutinize the disempowering elements of existing discourses on sustainability transitions. In response, I aim to integrate empowerment, equity issues, and more attention for civil society, within an analytical framework to study power in transition, and I aim to formulate empowerment principles for transition management.

2.2.3. Consecutive and parallel research steps in relation to research questions

An explorative and interpretative research design makes it inherently impossible to meticulously plan a research project beforehand. Nevertheless, retrospectively I can differentiate the following set of consecutive and parallel research steps: data-collection, case-selection, conceptualization, operationalization, structuring and analyzing data, theorizing and instrumentalization. While the specifics of these research steps, in terms of applied research methods, will be explained in the following sections, here I want to provide an indication of the relative chronological order of things. This research project concerned a part-time activity that covered a total of six years, from 2005 until 2010. Although the mentioned research steps occurred partly in parallel and recursively to one another, there was also some consecutive ‘order’ and ‘separation’.

	Conceptual	Empirical	Theory & instruments	Writing chapters
2005	Conceptualizing	Collecting data (phase I) Analyzing data (phase I)		
2006			Theorizing (phase I)	
2007			Instrumentalizing (phase I)	
2008		Collecting data (phase II)		ch 1,2,3
2009	Operationalizing	Structuring data Analyzing data (phase II)	Theorizing (phase II)	ch 4,5,6
2010	Reconceptualizing		Instrumentalizing (phase II)	ch 7,8,9, intermezzos rewriting all chapters

Figure 2. Overview of consecutive and parallel research steps

The first three and half years included; a) exploring and selecting cases, b) collecting empirical data, and c) conceptualizing power and empowerment in relation to transition studies. In the mean time, first attempts were made in; a) theorizing power in transition, on the basis of a purely deductive integration of power and transition concepts, b) analyzing some empirical observations with the use of empowerment concepts, and formulating empowerment principles for transition management, and c) analyzing Dutch discourses on ‘the transition to sustainable mobility’. These attempts were formulated in numerous conference papers, some of which were rewritten and published later on (Avelino & Rotmans 2011, 2009, Avelino 2009). While these first papers were written relatively separate from each other, later on they were integrated within this dissertation.

Data-collection can be categorized in two phases. The first phase of data-collection (interviews, ethnography, participant observation, action research, document reviews, and so on) was particularly ‘intense’ and ended in the fall of 2008. After that, data-collection consisted of occasionally attending meetings and events, and occasionally speaking to practitioners, and *retrospective* document reviews (of new relevant documents that were published after 2008). This second phase of data-collection continued while structuring and analyzing the data in 2009 and 2010.

At the end of 2008 I wrote the first versions of the first three chapters. A large part of 2009 was dedicated to transcribing and structuring my fieldnotes in digital form, which was a hell of a job that covered several months. After that I started systematically analyzing my collection of empirical observations. This included: a) categorizing all the collected empirical material in separate cases, b) ‘operationalizing’ by translating abstract concepts into a coherent set of empirical research questions, c) analyzing the empirical cases, and d) writing the empirical chapters.

While analyzing and writing down the case-studies, I identified observations that raised theoretical questions to be elaborated upon later on. 2010 was dedicated to theorizing power in transition and to instrumentalizing these insights by formulating power and empowerment principles for transition management (see section 3.5. on how this was done). Part of this exercise was also to reconceptualize transition (management) concepts in explicit power and empowerment terms. Besides writing the respective chapters (7 and 8), this also included writing the conclusion and the intermezzos, and rewriting all the other chapters.

To a certain degree, the multiple research steps and chapters can be directly related to the different research questions as formulated in the introduction (see overview below).

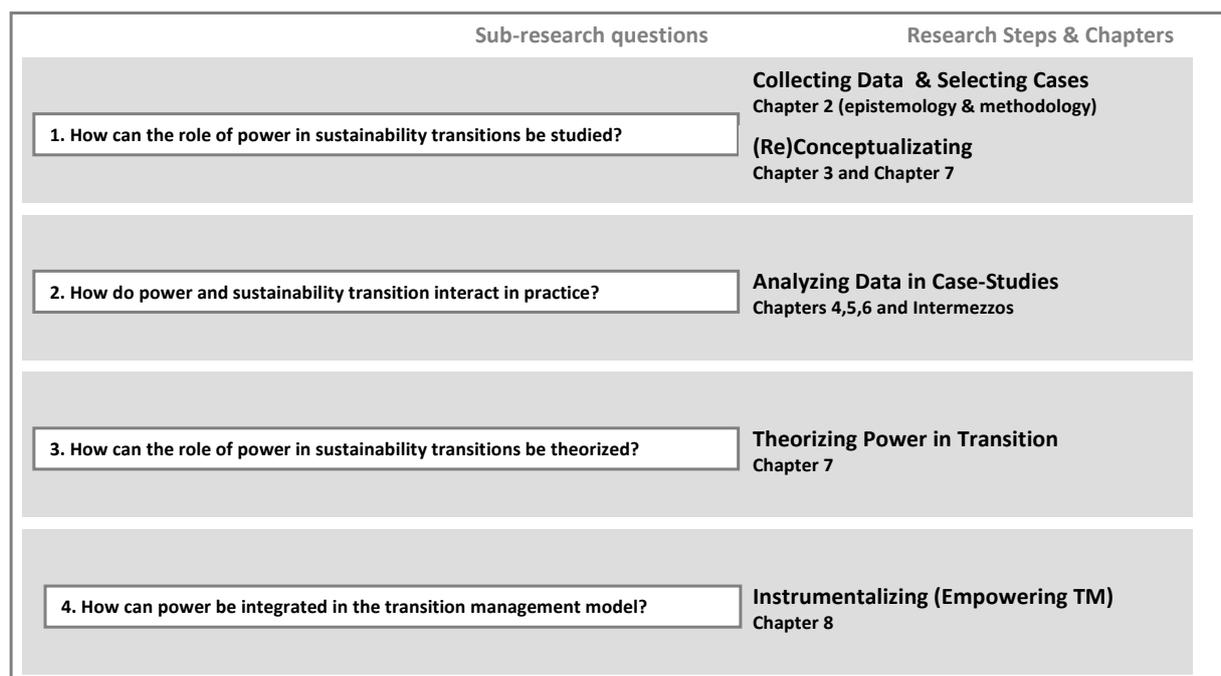


Figure 3. Overview of research steps in relation to research questions

2.3. DATA-COLLECTION AND CASE-SELECTION

So far the epistemological grounding, the overall research design, and its chronological process. I now specify the methods used for each separate research step, starting with data-collection and case-selection. Data-collection has been based on a combination of ethnography, phenomenology, action research, participant observation, document reviews, and interviews. All these research methods were believed to be necessary and complementary elements to observe the role of power in transition politics (i.e. ‘triangulation’). Describing the entire journey of data-gathering in linear details is impossible, as it took several years across many locations, individuals, and documents. This section aims to capture the process as concisely yet as accurately as possible. Here I will not provide a detailed overview of all empirical material, for the specifics differ for each case-study. Overviews of documents reviewed, interviews held, interview questions asked, and meetings attended, are provided in appendices I, II, and III, which are referred to in the empirical case-studies within footnotes. I will also not use this section to discuss my own role in the projects, programs, and networks under study. Instead, I specify my own role in each separate case study. In the spirit of ‘reflexivity’ (see section 2.2.2) I argue that reflecting on the role of the researcher is not merely an issue for a methodology chapter, but (also) an inherent element of the empirical analysis itself.

2.3.1. *Ethnography, phenomenology, and fieldnotes*

Ethnography was used as a method for data-collection to get acquainted with the Dutch ‘mobility community’. My very first research step was to get a sense of whom this Dutch ‘mobility community’ consisted of, and how they perceived the mobility sector. I thought of the ‘mobility community’ in two main categories:

1. *Travelers and transporters, people moving through physical space, meeting each other on the road, at stations, airports, public transportation, harbors, industrial terrains, and storage locations.*
2. *Those who are explicitly organizing, observing, and advising the mobility sector, including all the people occupied with the theme of mobility in professional, political, and/or intellectual sense: policy-makers, engineers, consultants, manufacturers, activists, lobbyists, researchers, and so on.*

The focus of my research is on the second category; the ‘issue-based’ mobility community, its members meeting each other in virtual and physical places, including business meetings, governmental departments, conferences, congresses, public debates, internet sites, policy documents, working groups, scientific or professional journals, etc. To a certain extent I was a member of this community, in the sense that I was researching transition politics around ‘sustainable mobility’. However, my research was primarily focused on politics and discourse, not so much on the mobility sector it self. As such I considered myself as a relative ‘outside observer’. I saw it as my duty to get to know the mobility community as broadly as possible, learn the different transport and traffic languages, and find my way in the wide array of literature, policies, and events that surrounded the mobility community.

As such my research started with an *immersion* in anything mobility related. First, virtual information was collected by signing up to various newsletters, reading all sorts of policy documents, books, and scientific articles on mobility. A broad range of information routes were collected, covering all modalities (road, rail, water, air, underground), main sectors (passenger transport, freight transport, public sector, private sector, NGO, research) and various Dutch regions. More importantly, different perspectives on mobility were sought, by visiting various conferences, congresses, public debates, working groups, and so on. More than hundred different types of public and private meetings related to mobility issues were visited (see overview in Appendix I). The focus was on meeting practitioners, policy-makers, and/or activists and lobbyists, rather than researchers only. During and after these meetings, every opportunity was taken to talk to people present at the occasion. Besides arranged interviews (see section 2.3.3.), I spoke to people in informal fashion, approaching individuals during receptions, breaks, lunches, dinners, trains rides back from the location, etc. I asked them what they had thought about the meeting, about the mobility sector in general, what should be improved and how this could be done according to them, what their role was in all this, what they considered to be 'sustainable mobility', and what their views were on transition (management), change and innovation.

This 'ethnographic journey' through 'the Dutch mobility community' gave an impression of different debates on mobility from a wide variety of perspectives. I was acquainted with the different (sub)communities in the Dutch mobility sector, and the relative segregation between them. Ethnography was necessary to discover which individuals interacted with each other, when, where, and how, and what kind of conversations emerged. These interactions could not have been unraveled through any other method than simply 'being there', for many of these interactions are invisible in documents or formal organizational structures, especially when dealing with *new* and informal networks. Moreover, this ethnographic study was an important basis for selection of cases (see section 2.3.4), in terms of deciding which cases were suitable, and in terms of making first contacts and developing good relations with the groups of actors under study. Much of the document-reviews, interviews, and participant observations conducted later on, could not have taken place without the use of these ethnographic methods.

As I went from exploring the mobility community to selecting specific case-studies, and moved on from *collecting* data to *analyzing* data, the use of ethnographic methods decreased and made space for more focused interviews, document reviews, and participant observation in programs and projects. Ethnographic methods did however continue to play a role throughout the research, as I kept visiting both formal and informal meetings on mobility, also *outside* the programs and projects focused on in the case-studies. Such external meetings served to keep in touch with 'the Dutch mobility community' and know what was being discussed outside the scope of the selected case-studies. This was necessary to understand the power relations between the programs and projects *within* the selected cases on the one hand, and *other* programs and projects in the mobility sector on the other hand.

Besides ethnography, use was also made of *phenomenological observation*. While ethnography originates in anthropology and is thus focused on observing (groups of) people, phenomenology allows for the observation of the more physical and non-human dimensions, inherent to mobility and its spatial and environmental implications. Observing these phenomena was relevant to understand the perceived power of mobility structures such as high roads, public transportation, and harbor areas, and to be able to understand the discourse of other people on these mobility structures. One of the most telling examples is that in my study of the South Wing region, I spend one month cycling through this region, going from city to city, taking pictures and talking to people on the way. This phenomenological approach was repeated two years later, together with three other researchers, with whom I spent two days cycling from Rotterdam to Antwerp, talking to locals and sharing our direct sensory observations of the regions surrounding the ‘transport corridor’ going from Rotterdam to Antwerp. At times, *phenomenology and ethnography were combined*, as certain project-meetings consisted of ‘study-trips’ or ‘excursions’. This included a cycling excursion to the western coast organized by the *South Wing Design Atelier*, a bus excursion to the Rotterdam harbor area with the participants of the *A15-project*, a bus excursion along the transport corridor between Rotterdam and Antwerp with several government and business representatives, and a study-trip to London with participants of the *Sustainable Logistics program*. These experiences contributed to the understanding of mobility issues, the social dimension of different traveling modes, and the different ways in which actors spoke of them.

All these ethnographic and phenomenological observations were captured in *field notes*, in which I tried to clearly distinguish what was said by practitioners from my own reflections (as far as possible). At the end of 5 years, I had approximately 40 notebooks with fieldnotes in chronological order. Besides ethnographic observations, these field notes also included the participant observations and action research experiences (see sections 2.3.2. and 2.3.4). Later I transcribed all these field notes and categorized them in terms of the different case-studies and intermezzos, which I then used for data-analysis. I specify more about how I structured and analyzed my fieldnotes in section 2.4.

Besides the Dutch ‘mobility community’, I also observed the Dutch ‘transition community’, especially when and where these two communities ‘overlapped’. I perceived this ‘transition community’ as consisting of those practitioners and researchers that were actively involved in promoting, researching and/or monitoring sustainability transitions. Although I focused on observing those that were specifically engaged with ‘the transition to sustainable *mobility*’, I also looked beyond that, at transition initiatives in other sectors (e.g. energy, health care, construction), or at those engaged with sustainability transitions more generally. To a certain extent, I also used ethnography to observe this ‘transition community’, and these observations are part of my field notes. However, being an explicit ‘member’ of this transition community, I was obviously not an ‘outside observer’, which limited the ability to do ‘real’ ethnography. This was especially the case because I was often involved in organizing, preparing or presenting at these meetings, thus unable to observe and write from a ‘reflective distance’. As such I generally characterize most of my observations in/around the ‘transition community’ not as ethnography, but rather as *action research and/or participant observation*.

2.3.2. Action research

Action research is distinguished from ethnography and participant observation, in the sense that in action research I did *more* than observing, reporting, analyzing, or evaluating. Action research means that I was involved in preparing and organizing meetings, and that I engaged in normative debates on sustainability. The advantages of action research are manifold, the most important ones being; 1) observing phenomena that would otherwise be missed, and 2) understanding the behavior of actors through direct identification. Action research allowed me to *experience* power relations rather than just observing them, and to design the research in such a way that it could be helpful for the participants, rather than merely the other way around.

Greenwood and Levin (1998:104-108) specify skills that action researchers must acquire to be effective, the overarching one being that a professional action researcher must learn to be “the friendly outsider”. Ten specific ‘skills’ described by these authors, served as guidelines for a general ‘rule of conduct’ in my action research activities:

1. *Reflect back to the ‘local people’, including criticism of perspectives and habitus, in a way that is experienced as supportive rather than negative through: direct feedback, written reflections, and pointing to and citing comparable cases.*
2. *Opening up lines of discussion and reopening the possibilities for change; encouragement and moral support by providing information from other cases where similar problems existed but change turned out to be possible.*
3. *Making tacit knowledge evident, including both supportive comments on local capabilities as well as criticism of particular local modes of thinking.*
4. *Speaking the local unspeakable while being careful not to speak up on every unspeakable matter; as “too much feedback can block a group, too little can block a group from moving ahead” (ibid:106).*
5. *Help practitioners (referred to as ‘local people’ by Greenwood and Levin) by inventory, and assess the resources available for a project of change.*
6. *Being an outsider and using these outsider’s links to the outside world, i.e. be a resource to the project by providing links with other communities, governmental departments, universities, NGO’s, professional consultants, and so on*
7. *Be a coach and never a director or a boss, i.e. facilitate if necessary and when welcomed, without ever taking charge of direction, management, or control.*
8. *Being self-confident in social situations, including open-mindedness, lack of concern with maintaining rituals of status or superiority, being appreciative of local capabilities and skills, expressing this appreciation tactfully and celebrating the possibilities for change that exists locally.*
9. *Being a risk-taker, willing and able to risk personal failure by supporting a project that may or may not succeed.*
10. *Using playful humor to provoke amusement and openness to change; as “there is a strong connection between irony, humor, and achieving a sense of [the] world of the possible versus the actual. Irony and humor look at the world from the vantage point of the possible, making the actual only one of the possible outcomes” (ibid:107).*

These principles of action research also relate to the interpretative research paradigm more generally, in the sense that interpretative research requires one to be *empathic*

with individuals under study, to acknowledge their interpretations and perceptions, and to be able to doubt one's own expertise. As formulated by Yanow:

Interpretation as a method, then, is conducted as “sustained empathic inquire” (Atwood and Stolorow 1984:121), in which empathy constitutes and intentional embracing of the other's meaning. Studying the life world of research site members and the political, organizational, and/or communal artifacts they embed with meaning (...) entails a decentering of expertise on the part of the researcher (Yanow, 2006:22).

This strong involvement and empathy with practitioners also had certain disadvantages, in terms of particularly time-consuming research activities and the risk of losing a critical distance. As such the action research activities were always *limited* to a certain (sub)project or project-phase, and were always preceded and followed by taking a critical distance to the case, by applying other methods such as unobtrusive observation, document reviews, and interviews (see section 2.3.3).

Besides action research as a method for data-collection, action research is also an inherent element of transition management research as a more general paradigm. In the transition management literature action research is referred to as “applied research based on normative objectives (i.e. promoting social change) (...) [where] scientific knowledge and practical experience are linked to help practitioners deal with imminent problems and contribute in general to the improvement of society” (Loorbach, 2007:37). In that context, action research in transition management serves to empower practitioners by providing them with necessary skills and knowledge to pursue their sustainability ambitions. Moreover, transition research “links the action research component explicitly to development of theory (...) while action research is primarily concerned with application and transfer of existing theory, models, concepts, and knowledge, transition research aims to develop *new ones*” (ibid, *emphasis added*). As such, the action research component is not only confined to a method of data-collection, but also applies to the formulation of empowerment principles for transition management, and to the development of participatory power and empowerment tools.

2.3.3. Participant observation, document reviews & interviews

Most of the data-collection took place through participant observation, document reviews, and interviews. When combined with participant observation, document reviews focused on specific documents that were referred to during attended meetings (i.e. policy documents, proceedings, discussion papers, consultancy reports, project proposals, research publications, newspaper articles, etc.) The level of detail in data-collection differed for each project under study: some were studied through document reviews and interviews, while others were more closely observed through participant observation and action research. The specifics of research methods applied to different cases are clarified in the respective chapters, intermezzos, and appendices.

A total of 67 interviews were held (see appendix II). While some interviews were directly oriented towards my research questions on power in transition (on the basis of semi-structured interviews), the majority of interviews occurred in the context of action research, i.e. interviewing participants as part of the preparation for a specific meeting, and/or as part of a commissioned report or evaluation. The questions that were asked, and the context in which the interviews took place, are specified in appendix II. The methods of ethnography and action research were both crucial to be able to conduct the interviews. It was mostly by ‘being there’ at meetings and excursions that there was a chance to first have an informal and open conversation with a certain individual, which created trust and willingness to cooperate with an interview. This was especially necessary to ask people about power, a topic that is often considered to be sensitive and controversial, and thus asks for a certain level of confidentiality.

2.3.4. Selection of cases

Four cases were selected that zoom in on particular groups of actors trying to transform (a part of) the Dutch mobility sector: the *Transumo program*, the *A15-project*, the *innovation program Sustainable Logistics* and the *South Wing transition project*. I provide a short description of the cases below.

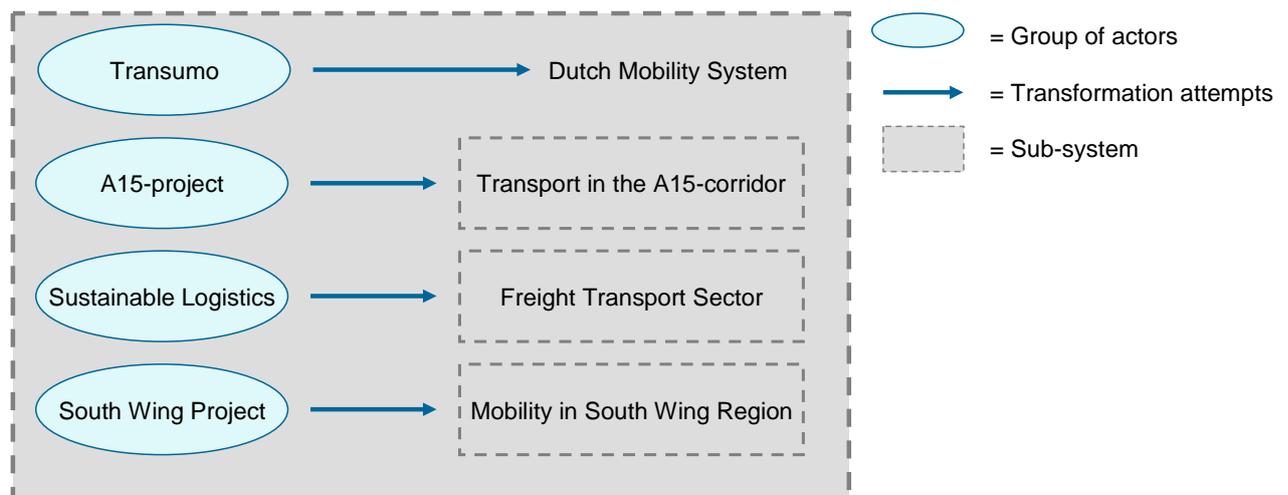


Figure 4. Cases: groups of actors trying to transform (a part of) the Dutch mobility sector

Transumo is an abbreviation for ‘TRANSition to SUSTainable Mobility’ and refers to a program that facilitated several organizations from the public, private, and ‘knowledge’ sectors to collaborate in dozens of applied research projects related to sustainable transport. *Transumo*’s mission was described in terms of ‘accelerating’ and ‘encouraging’ the ‘transition to sustainable mobility’, by ‘establishing a transition process that leads to the replacement of the current, supply driven, mono-disciplinary technology and knowledge infrastructure, with a demand driven, multidisciplinary and trans-disciplinary, participative knowledge infrastructure’. This was supposed to facilitate ‘sustainable mobility’ in terms of ‘a balance between profit, planet and people’. Besides my direct involvement in some projects (e.g. the A15-project), I was asked by *Transumo* to evaluate some of their projects from a ‘transition perspective’ and to give advice on how transition

management could be applied. This allowed me to observe certain struggles with transition management, and to analyze power relations between policy-makers, scientists, business representatives, and NGOs, as they interacted within various Transumo-projects.

The *A15-project* was one of the individual projects that were part of the Transumo program. It aimed to find solutions for the emerging problems around the Rotterdam harbor from 2012 onwards, these problems being; increasing traffic flows on the main road (the A15), and the negative environmental effects on the surrounding, habituated region. I was involved in the A15-project in terms of organizing meetings, interviewing stakeholders, and contributing to reporting activities. The A15-project allowed me to study various power relations between actors, as it was based on a consortium of research institutes, (semi)governmental organizations, environmental NGOs, various companies including the Rotterdam Port Authority, and a large trade-organization. Even though the A15-project initially did not include a transition management approach and was believed to lack a long-term perspective on sustainable mobility, this changed during the process as several efforts were made to include the dimension of sustainability transitions, which also implied involving various ‘innovative outsiders’ in the project. These project developments and the subsequent interaction between different actors, provided empirical input to unravel power relations at play, condensed in this one intense spot of the Dutch transport sector; the A15-region. Moreover, this case allowed me to zoom in on the micro-politics of the Transumo program at the operational project level.

The innovation program *Sustainable Logistics* was commissioned by the *Ministry of Transport, Public Works and Water Management (V&W)* and aimed to facilitate the Dutch freight transport sector to become more sustainable. On the one hand the freight transport sector has a very powerful position in the Dutch economy. On the other hand transportation companies have an inferior position when it comes to profit margins and investment returns. This has direct consequences for the capacity (or lack thereof) of the freight transport sector to become more ‘sustainable’. I was invited to join the management team to bring in insights on transition management, and to help organize, facilitate, and prepare some stakeholder meetings. Studying the *Sustainable Logistics* program and the way in which its participants struggled to transform the Dutch freight transport sector into a more sustainable one, allowed me to witness political debates on logistics and sustainable freight transport, and to study the complex power relations between government officials, consultants, freight operators, and production companies.

The *South Wing* region refers to the southern part of Netherlands’ most intensely urbanized area (the ‘Randstad’), including Rotterdam, The Hague and 59 other, smaller cities. Various transformation plans were developed for the South Wing region. The Province of South-Holland decided to facilitate the creation of a so-called ‘Southwing design atelier’ in which spatial planners, urban geographers, and mobility experts were supposed to reconsider the needs of the South Wing, an important question being ‘how the mobility system could live up to these regional needs’. During that same period a so-called *Transition Arena* was set up according to the prescriptive transition management model, connecting 15-20 individuals with differing backgrounds and perspectives on the

challenges of spatial planning and mobility in the South Wing. I was actively involved in the set up of this transition arena and in the preparation of various meetings, including selecting and interviewing participants, and writing the final reports. This allowed me to study the role of power in the developing process of a 'transition arena' and its interaction with the South Wing region, including the power relations between spatial planners, transport engineers, environmental groups, social scientists, ministerial departments, provinces, municipalities, and other governmental levels.

Beside different functional and geographical levels, these different cases also represent different system definitions, different actor-constellations and different strategies towards 'the transformation of the Dutch mobility transport', varying from public-private cooperation and applied research, to a more activist approach. Transition management and sustainability ambitions played a role in all cases, but to a different extent and in distinct ways. The expectation was that this would allow me to analyze different manifestations of power in transformation attempts and transition management politics.

To a certain extent, the selection of cases occurred (partly) *posteriori*, in the sense that data-collection was partly conducted *before* empirical objects were delineated as separate case-studies. In the six years covered by this research project, I have been involved in numerous projects, programs, platforms, committees, networks, and organizations. Although the general contours of my cases had been identified by the end of 2006 (thus allowing for more deliberate and focused data-collection from 2007 onwards), potential cases were added, removed and restructured. The final delineation of chosen cases (in terms of what they included and what not), and subsequent additional data-collection, was a process that only ended in 2009 and 2010 (when the actual empirical chapters and intermezzos were written down).

As such, the specification of criteria for case-selection was partly a recursive and retrospective exercise. The (*posteriori*) selection criteria for the chosen cases can be categorized in 'process criteria' and 'content criteria' (see overview in table below).

Selection criteria case-studies	
Content criteria	
1	The group of actors under study had to have a (self-appointed) transformative ambition related to sustainable mobility
2	This transformative ambition had to be geared at (a part of) the Dutch mobility sector; even if it (partly) overlapped with other sectors (energy, spatial planning, agriculture), there had to be a clearly distinguishable focus on (a part of) the Dutch mobility sector
3	The different cases had to represent different strategies towards the transition to sustainable mobility
4	All cases had to have a link to transition management, but in different ways and to a different extent
5	The different cases had to represent different functional, institutional, and geographical levels of the Dutch mobility sector
6	The different cases had to represent different actor-constellations
7	The different cases had to represent different problem and system definitions

Process criteria	
8	This research had to be perceived as relevant by the group of actors, in terms of being involved in and contributing to their transformative ambitions
9	This involvement and contribution had to involve a concrete action (e.g. writing a report, organizing or preparing a meeting, and/or interviewing stakeholders)
10	The researcher had to be allowed to be there at project meetings
11	The researcher had to have access to relevant documents
12	Participants had to be willing to cooperate with interviews

Table 2. Content and process criteria for case-selection

While the four cases cover the focused empirical observations on specific projects and programs, some of the more general ethnographic observations on the Dutch ‘mobility community’ and ‘transition community’ are presented in a separate intermezzo on *Transition Discourse and Sustainable Mobility*. This intermezzo discusses the discursive and political context of the cases and positions them in the wider transition and mobility discourses. I thus refer to that intermezzo for additional justification (and admitted limitation) of the selected cases. Furthermore, a critical evaluation of my case-selection will be part of my research results. When theoretically discussing the empirical observations in chapter 7, I will discuss the limited scope of these cases, and when presenting the analytical power-in-transition framework, I will propose additional criteria for case-selection for future research.

2.4. DATA-ANALYSIS

So far for data-collection and case-selection. I now turn to discuss the research methods used for data-*analysis*. First, I explain how I develop a conceptual power framework and how I operationalize this in empirical research questions. Second, I discuss the methods used for data-analysis; discourse analysis, deconstruction, and narrative analysis. Third, I explain the difference between data-analysis within the *empirical chapters* on the one hand, and within the *intermezzos* on the other hand.

2.4.1. Developing & operationalizing conceptual power framework

In chapter 3 I approach power as a ‘family resemblance concept’, and develop a context-specific conceptual power language that is suitable for transition research. While including many of the concepts and insights from literature on power and empowerment, I also propose some additional concepts, new elements, and alternative typologies. In doing so, I make use of the ‘analytical criteria’ for sustainability research, as specified in section 2.2.1. While the development of this conceptual power framework is *deductive*, the way in which the concepts are ultimately used for empirical analysis, is interpretative. At the end of chapter 3, the concepts on sustainability transitions, transition management, power and empowerment, are operationalized in terms of translating them into a set of questions to be asked about empirical case-studies (4 main questions and 13 sub-questions, see chapter 3, section 3.5).

These questions are answered in an interpretative manner, in the sense that I address ambiguities and paradoxes in the possible answers, and also discuss the interpretations of the practitioners themselves. For instance, when asking ‘how sustainability is dealt with’ or ‘how transition management was applied’, I discuss how practitioners constructed and struggled with the notions of sustainability and transition management. As for the questions on power and empowerment, although use is made of predefined concepts, categories, and typologies, the purpose thereof is not to disclose the empirical analysis in predefined variables. On the contrary, these concepts, categories, and typologies serve to broaden and open up the power analysis beyond the obvious, by providing guidelines on which different dimensions, ambiguities, and paradoxes to look for. The conceptual power framework and its operationalization in separate research questions mainly serves to *process* empirical material, in terms of knowing which dimensions to look for and how to structure these within a particular case-study.

With ‘empirical material’ I am referring to; 1) my transcribed field notes, 2) my interview reports, and 3) a selection of case-related documents, including both official publications, as well as internal minutes of meetings and email correspondence (see appendices). In order to process this empirical material, I sat down with the pile of documented material for a particular case (amounting to hundreds of pages for each case), a marker and a pen. I analyzed these texts by marking the sections that had anything to do with sustainability, transitions, transition management, power and empowerment. In the margins I indicated how the highlighted section related to specific sub-questions (e.g. ‘transition management’, ‘sustainability’, ‘intrinsic motivation’, ‘resources’, ‘power dynamics’, and so on). Subsequently, I copied the highlighted sections into a Word document on a specific case, categorized in sections and subsections according to the 4 main empirical questions and 13 sub-questions. Once I was done categorizing these texts, I ended up with one Word document for each case-study, with a selection of field notes, interview quotes, and document excerpts for each subsection. This is when I would start the next phase of data-analysis.

2.4.2. Discourse analysis, deconstruction, and narrative analysis

The conceptual power framework, and its operationalization in separate research questions, served to *process* and *structure* empirical material, in terms of knowing which dimensions to look for and which questions to ask. The actual *analysis* in terms of formulating *answers* to the questions was based on a combination of discourse analysis, deconstruction, and narrative analysis. With *discourse analysis* I refer to discussing selected interview quotes and document excerpts as a means to answer the sub-question. Often this included discussing how several quotes and excerpts either confirmed or contradicted one another. I also *deconstructed* textual quotes and excerpts in terms of unraveling their underlying (implicit) assumptions, presupposed dualities, hierarchical oppositions, and inherent contradictions. As for *narrative analysis*, this refers to telling the story of a particular case in terms of describing what, who, when, and where (e.g. dates, people, events, as mentioned in the selected documents, interviews and field notes), without explicitly discussing or quoting text. The added value of narrative analysis

is to move beyond what people said or wrote to what they actually ‘did’ and what actually ‘happened’ at specific places and at a specific point in time (Flyvbjerg 1998, 2001).

It is important, however, to emphasize that also discourse analysis is not only about that what people say or write; it is primarily about unraveling processes of meaning and interpretation that underlie that which people do and decide. Discourse can be defined as “a specific ensemble of ideas, concepts, and categorizations that are produced, reproduced, and transformed in a particular set of practices and through which meaning is given to physical and social realities” (Hajer 1995:44). Discourse includes various ‘story-lines’: “a generative sort of narrative that allows actors to draw upon various discursive categories to give meaning to specific physical or social phenomena. The key function of story-lines is that they suggest unity in the bewildering variety of separate discursive component parts of a problem” (ibid:56). The study of story-lines – who utters them, where, how, and in what context – is crucial to understand power in relation to transformation:

Political change may (...) take place through the emergence of new story-lines that re-order understandings. Finding the appropriate story-line becomes an important form of agency. (...) The argumentative approach focuses on the level of the discursive interaction and argues that discursive interaction (i.e. language in use) can create new meanings and new identities, i.e. it may alter cognitive patterns and create new cognitions and new positionings. Hence discourse fulfils a key role in processes of political change (Hajer 1995:56,59)

The empirical focus of this research has not only been on ‘internal’ story-lines within separate cases, but also addresses the relations, similarities, and differences between these ‘internal’ story-lines and ‘external’ discourses. The advantage of combining different methods for data-collection (as specified in section 2.3), was that it allowed me to compare the different things people said or wrote in different contexts. Discourse at project meetings often seemed significantly different from discourse in project documents, and internal and informal discourse differed greatly from public or recorded discourse. Of course, it is no surprise *that* there were such differences – and sometimes contradictions – between different discursive contexts. Pointing this out would hardly be a satisfying research result, as “coherence is not an essential feature of discourse” (Hajer 1995: 44). The interesting things, however, was to find out which differences and contradictions could be found, and also when, amongst whom, and in which context.

2.4.3. Empirical chapters versus intermezzos

The difference between the empirical chapters and intermezzos is as follows. The case-studies as presented in the empirical chapters are described, structured, and interpreted by applying the conceptual power framework and answering the pre-defined research questions that are part of that framework. Even though the case-studies are analyzed in an interpretative manner, this is done in a structured way, by answering predefined questions about a clearly delineated group of actors who aim to transform a clearly delineated subsystem of the Dutch mobility system. In contrast, the intermezzos do not

follow this predefined structure, and are not confined to (a particular subsystem) of the mobility sector. Compared to the case-studies, the intermezzos include:

- more explicit attention for discourse as an ontological object of study
- more reflection on action research activities and the perspective of the researcher
- exploring and crossing the system boundaries of the mobility system
- discussing power and transitions in more 'common-sense' terms

The first intermezzo on *Transition Discourse and Sustainable Mobility* will discuss broader Dutch transition discourses in relation to sustainable mobility, thereby also providing a political and social context to interpret the internal discourses within the separate cases. As such, this intermezzo looks beyond to transport sector to transition discourse more generally, and also discusses the issue of discourse as an empirical phenomenon (i.e. not only using discourse analysis as an epistemological approach but also addressing discourse as an ontological object of study). The second intermezzo on the South Wing region discusses a regional policy discussion, and a transition project in which mobility was just one of the many issues in the broader theme of spatial planning. Moreover, the South Wing project differed from the other cases, in that it was an action research project in which my research institute DRIFT had the leading role. Hence my own role in this project was of a different nature than my role in the other cases; I had much less 'distance'. The purpose of both intermezzos is to contextualize and complement the empirical chapters, thereby providing additional insights that will play an important role in theorizing power-in-transition and empowering transition management.

2.5. THEORIZING AND INSTRUMENTALIZING POWER IN TRANSITION

By 'theorizing' I refer to the generation of hypotheses on the role of power in transition, and to developing an analytical tool to study empirical phenomena in future research. The main purpose of generating hypotheses is not to 'predict' or 'explain', but mainly to be explicit about my empirical and theoretical insights. To avoid that these insights remain vague, I aim to clearly synthesize and formulate them in explicit propositions (i.e. hypotheses), thereby emphasizing an intention and invitation to further scrutinize these propositions in empirical study. By 'instrumentalizing' I do not mean reducing insights on power and empowerment to a definite set of 'instruments', but rather to indicate how these insights could be applied to practice. The main purpose of formulating power and empowerment 'principles', and of presenting a participatory 'power tool' an 'empowerment tool', is not to 'prescribe' what practitioners should do, but rather to provide suggestions on how practitioners can be facilitated in dealing with power and empowerment issues.

Both the theorizing of power-in-transition (chapter 7) and the empowering of transition management (chapter 8) occurred through a combination of inductive and deductive reasoning. Neither the hypotheses nor the principles were entirely 'deduced' from conceptual logic, nor were they entirely 'induced' from empirical observations; it was a combination of both. By 'deductive' I mean that I make use of a conceptual power

framework which was partly developed a priori to empirical observations (in chapter 3). By 'inductive' I mean that I use empirical observations to reconsider and extend this conceptual framework (in chapter 7). As such, 'inductive' does not mean that theoretical observations are based on empirical truths or generalizations. Rather, theoretical observations are *informed by* empirical observations, in the sense that these empirical observations indicate what is relevant for a theory on power in transition.

I will also use empirical observations to reconsider certain paradigms underlying transition studies, by questioning to what extent these paradigms are appropriate to describe and understand empirical phenomena. For instance, I will question the *functionalist* basis of transition studies. Rather than merely questioning this functionalist approach from an epistemological point of view, I will also address its practical repercussions by discussing how (implicit) functionalist system boundaries impact the way in which practitioners approach the issue of sustainability. Subsequently, I will propose an analytical power-in-transition framework that moves beyond this functionalist paradigm.

As such, epistemological discussions will not end here. Rather, epistemological approaches to power in transition are a recurring theme throughout this dissertation. In line with the interpretative research approach, I believe that epistemology and ontology, theory and observation, imply one another and cannot be entirely separated. When theorizing power in transition and presenting the analytical power-in-transition framework, I will also discuss research methods and case-selection, thereby reconsidering the research methods and cases that were used in this dissertation, and proposing which cases and methods might be more appropriate for future research.

CHAPTER 3.

Beyond the State-of-the-Art: Reconceptualizing Power

This chapter provides the conceptual basis of this thesis, and a state-of-the-art overview of the literature on which it builds. First, I address the state-of-the-art of transition studies, focusing on the way in which it deals with power (section 3.1). Second, an overview is given of main concepts and points of contestation in literature on power (section 3.2) and empowerment (section 3.3). In each of those sections I discuss what the remaining conceptual challenges are, and argue why a new conceptualization of power is believed to be necessary. Subsequently, a reconceptualization of power is presented (section 3.4). To close this chapter, I discuss how this new conceptual power framework will be used for empirical analysis (section 3.5).

“Irrespective of mode of analysis, an adequate framework of power should enable us to sketch a plausible narrative, where plausibility is not brought into question by recourse to devices such as analytical prime movers, or hidden in an inexplicable mechanism of thought control.”
(Clegg [1989]2002: 263)

3.1. STATE-OF-THE-ART: TRANSITION STUDIES AND POWER

In this section, I elaborate on the field of transition studies and the challenges of better conceptualizing power therein, as shortly introduced in chapter 1. Providing a comprehensive overview of the entire field is beyond the scope of this thesis. A good overview of transition studies can be found in the recent state-of-the-art book (Grin et al. 2010). This book has been divided in three parts that correspond with the three main 'schools' in transition research: I) the socio-technical perspective (Geels & Schot 2010), II) systems theory and transition management (Loorbach & Rotmans 2010a), and III) the governance perspective (Grin 2010). Here I focus on discussing those aspects of transition studies that are directly relevant for this dissertation, those being; 1) some basic concepts and analytical frameworks in transition studies, 2) transition management, and 3) how the issue of power is dealt with. Subsequently, I identify remaining challenges for conceptualizing power in transition.

3.1.1. *System innovations and sustainability transitions*

A sustainability transition generally refers to a “radical transformation towards a sustainable society as a response to a number of persistent problems confronting contemporary modern societies” (Grin et al. 2010:1). One of the most central premises in transition studies is that persistent problems are symptoms of unsustainable societies, and that dealing with these persistent problems in order to enable more sustainable systems requires transitions and system innovations. In a way, transitions can be viewed as the superlative of system innovations; while a system innovation refers to transformations within specific subsystems, a transition transcends individual systems and comprises various system innovations at different scale-levels and over a long-term period of time (Loorbach & Rotmans 2010a). A transition is the result of ‘co-evolution’; “when the interaction between societal subsystems influences the dynamics of the individual subsystems, leading to irreversible patterns of change” (Grin et al. 2010: 4).

More specific definitions of a transition differ for each ‘school’ of transition studies. Geels and Schot (2010:11) define transitions as “shifts from one socio-technical system to another”. Loorbach and Rotmans (2010:108,109) characterize a transition more broadly as “a fundamental change in structure, culture, and practices”, “a radical, structural change of a societal (sub)system that is the result of a co-evolution of economic, cultural, technological, ecological, and institutional developments at different scale levels (Rotmans et al. 2001)”, and - in systemic, temporal terms - “an intricate web of fast and slow developments as a result of positive and negative feedback mechanisms that spans one or two generations (25-50 years)”. All definitions have in common that they distinguish transitions and system innovations from ‘incremental’ or ‘regular’ innovation. While regular, incremental innovation can refer to a new product or technology, system innovations and transitions are always about more radical transformation at higher levels of aggregation, including a change of structural and institutional conditions under which emerging innovations can be ‘up-scaled’ and embedded in a broader societal context. Having said that, incremental innovation is still part of a transition process. As Loorbach and Rotmans (2010:145) formulate it, a transition comprises “radical change in

incremental steps [in which] the system heads for a new direction towards new attractors, but in small steps”. Although radical change is necessary to transform the system, *immediate* radical change causes sudden disruption and subsequent resistance. As such, incremental change is necessary to “adjust to the new circumstances and to build up new structures that align to the new configuration” (ibid). However, such incremental change is not *enough*, nor is a transition about ‘gradual’ development. Rather, a transition is a *non-linear* process characterized by *interplay* between incremental and radical change, including “periods of drastic, sudden and radical changes” (ibid).

Transition research has its intellectual roots in innovation studies as found in social studies of technology and evolutionary economics (Rip & Kemp 1998, Geels 2005). While originally the focus was on transitions in socio-technical systems (e.g. mobility, energy, agriculture), recent developments have broadened the focus towards societal systems more generally (e.g. regions, sectors), and to ‘reflexive’ governance for sustainable development (e.g. Voß, Smith & Grin 2009). Either way, the primary object of transition studies remains to be societal (sub)systems, be it (sub)sectors or regions. This systemic perspective requires a holistic view that acknowledges the interaction between human and non-human aspects. The influence on societal systems is not only social, cultural, institutional and political, but also economical, ecological and technological⁶.

The understanding of *transition processes* can be distinguished from the understanding of *how actors (can) influence* transition processes; the first object of study is referred to as *transition dynamics*, the latter as *transition management* (Rotmans 2003, Lorbach 2007). In the latter, sustainability is an explicit normative orientation for research, as it aims not only to understand how transitions occur, but also how transitions can be *influenced* towards a more sustainable society. For a discussion of how the transition management literature – and this dissertation – approaches the essentially contested notion of ‘sustainability’, see chapter 2, section 2.2.1.

3.1.2. Analyzing transitions: multi-level, multi-phase and multi-pattern frameworks

In order to analyze transition *dynamics*, different levels in time and (functional) aggregation are distinguished, resulting in the ‘multi-phase’, ‘multi-level’ and ‘multi-pattern’ frameworks (Rotmans 2005, Grin et al. 2010, De Haan 2010). The *multi-level framework* is one of the most central concepts in transition studies (Rip & Kemp 1998, Geels and Kemp 2000, Geels 2005). The multi-level framework distinguishes between different levels of functional aggregation; macro-, meso- and micro-level. The multi-level framework serves to analyze a transition process as an interaction through time, between ‘landscape’ (macro), ‘regimes’ (meso), and ‘niches’ (micro).

⁶ This distinguishes the field from demographic transition theories, as well as democratic transition theories, or other forms of transition research found in political science that focus predominantly on processes of change in and around governments and nation-states (e.g. power transition theory as found in international relations, see for instance Lemke & Kugler 1996).

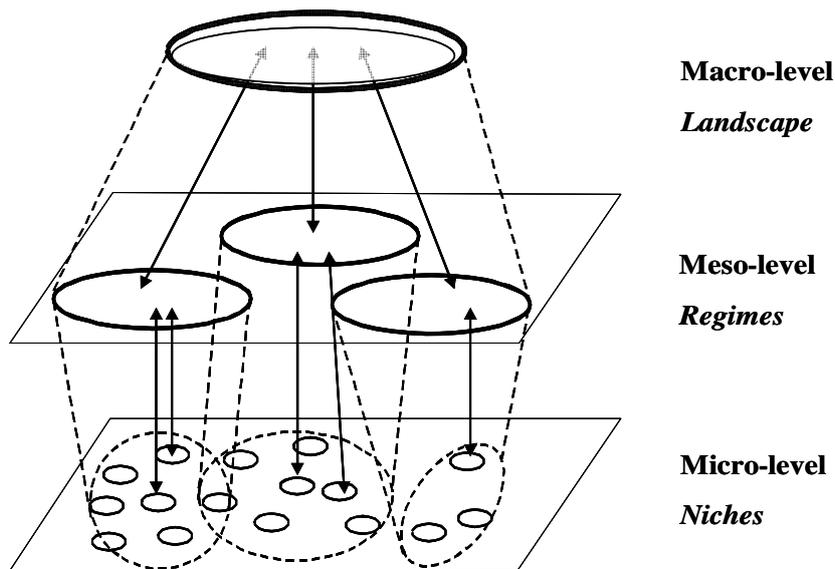


Figure 5. Multi-Level Framework (Geels and Kemp, 2000)

At the macro-level we find the *landscape*, which refers to the surroundings of a particular societal system under study, where one sees macro-trends with a relatively slow progress and developments with a high autonomous character. Specific definitions of the *regime* have been altered and broadened over the years. Rip and Kemp (1998:340) first defined a *technological regime* in terms of rules, engineering practices, and process technologies as embedded in institutions and infrastructures. Geels (2004,2010:20) defined a *socio-technical regime* as consisting of ‘cognitive, regulative and normative rules’ that “account for the stability and lock-in of socio-technical systems”. In the mean time, Loorbach and Rotmans (2010a:108,110, in reference to de Haan 2010) have defined a *societal regime* as “a dominant set of structure, culture and practices”, where structure refers to the ‘institutional and physical setting’, culture to the ‘prevailing perspective’, and practices to ‘rules, routines and habits’. Regardless of differing definitions, the notion of the *regime* essentially refers to the most ‘dominant’ societal constellation that ‘dominates’ the stable functioning of a societal system and defends the status quo. *Niches* on the other hand refer to those constellations in which non-conformism and innovation can develop. These niches are also part of the societal system, but able to deviate from the dominant structures, cultures and practices within that system.

As the regime dominates the societal system, a necessary condition for a transition to occur is that this regime is either transformed or replaced by a new regime. At first, the regime resists change, but as societal pressure at the landscape and niche-level increase, the regime starts breaking down. As changes accelerate and multiply, old regime structures are replaced by new structures. Ultimately a new regime is formed that replaces the old regime. In this interaction between regime, niches, and landscape various ‘phases’, ‘patterns’, and ‘pathways’ are distinguished, which serve to construct different narratives on how transition processes develop, and to describe and analyze empirical observations (De Haan & Rotmans 2011, Van der Brugge 2009, Schot & Geels 2007).

The *multi-phase framework* distinguishes four different phases: 1) pre-development, 2) take-off, 3) acceleration, and 4) stabilization (Rotmans 2005: 24). During the *pre-development*, changes occur in the ‘background’ at the landscape and niche level, which are resisted by the regime. In the *take-off* phase structural change picks up momentum, in the sense that these changes pressure the regime in such a way that it starts breaking down. During the *acceleration* phase, structural changes become visible as old regime structures are being replaced by new structures. In the *stabilization* phase a new dynamic state of equilibrium is achieved, in which a new regime has replaced the old regime. This describes an ideal-type transition that can be visualized through the so-called ‘S-curve’ (see figure below). ‘Non-ideal’ and ‘reverse’ transition paths can also occur (a *lock-in*, *back-lash*, or *system breakdown*)⁷.

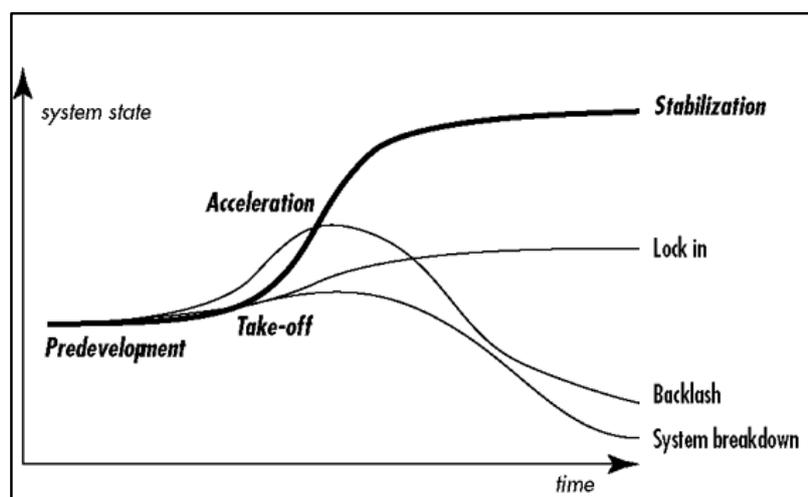


Figure 6. Multi-phase Framework (source: Rotmans 2005)

The *multi-pattern framework* (De Haan 2010, de Haan & Rotmans 2011) serves to distinguish different *transition paths* in empirical analysis, and differentiates ‘conditions’ for transitional change, ‘mechanisms’ through which societal ‘constellations’ develop, and ideal-type ‘patterns’ of landscape-regime-niche interaction. Different types of interactions can result in a transition, depending on the conditions and mechanisms that exist in a particular societal system, and depending on the way in which landscape, regimes, and niches interact through time.

So far the three most basic analytical ‘multi-frameworks’ in transition studies, as developed over the past few years. I will not be directly applying any of these analytical frameworks in this dissertation. Rather, my ambition is to re-evaluate and reconceptualize some of the basic concepts in these analytical frameworks from an explicit power perspective. This will especially concern the multi-level framework and the interaction between ‘landscape’, ‘regimes’, and ‘niches’. Besides transition studies, several other

⁷ *Lock-in*: when “choices made in the past exclude different opportunities now, e.g. by ingrained behavior or ideas”, *back-lash*: when the diversity of alternatives is too low and ‘too much is betted on the wrong horse’ (e.g. a ‘hype’), *system breakdown*: when a dynamic equilibrium is disturbed without being re-established (Rotmans 2005: 24).

fields in social science have used the ‘regime’ concept. The appeal of the regime concept has partly been its ability to concede in ongoing debates between ‘pluralists’ and ‘elitists’ (to be discussed in section 3.2) and to synthesize structure and agency (Mossberger and Stoker 2001). The disadvantage, however, is that the regime concept easily leads to escapism in terms of avoiding fundamental questions on power, structure, and agency. The definition of a regime as a ‘dominant’ constellation is conceptually equal to defining the regime as the constellation with ‘the most power’. It logically follows that any question about regime transformation and niche-regime interaction involves a question on power. Although transition researchers in the mean time have addressed the issue of power (to be discussed in sections 3.1.4 – 3.1.7), this has not yet led to a comprehensive analytical framework to study the role of power in transition processes. My contribution will be to develop such an analytical framework to study power-in-transition, and part thereof will be a reconceptualization of the multi-level framework. In chapter 7 I will also discuss how this new power-in-transition framework relates to the existing multi-phase and multi-pattern frameworks.

3.1.3. Transition management

Based on the transition concepts discussed earlier, a governance model has been developed that aims to ‘resolve persistent problems in societal systems’. The underlying assumption is that full control and management of these problems is not possible, but that one can ‘manage’ these problems in terms of adjusting, adapting, and influencing the societal system by organizing a joint searching and learning process, focused on ‘long-term sustainable solutions’ (Rotmans et al. 2001; Loorbach 2007). Although transition management can be used as a descriptive and analytical framework to study how actors (attempt to) influence transition processes, it has so far mostly gained attention as a *prescriptive governance model*. Transition management is presented as “a new mode of governance for sustainable development” (Loorbach 2007), that “tries to utilize the opportunities for transformation that are present in an existing system”, by “joining in with ongoing dynamics rather than forcing changes” (Rotmans et al. 2001).

These aims are captured in a “cyclical process model” (TM-cycle, see figure below), which serves to organize a participatory stakeholder-process that is primarily aimed at envisioning, learning, and experimenting, including the following activities: 1) problem structuring, establishment of a transition arena, and envisioning; 2) developing coalitions, transition agendas, transition images, and related transition paths; 3) establishing and carrying out transition experiments and mobilizing transition networks; and 4) monitoring, evaluating, and learning lessons from the experiments and, “based on these, adjust vision, agenda and coalitions” (Loorbach 2007:115). In the past few years, different elements of the TM-cycle have been developed, applied, and researched; transition *experiments* (Van der Bosch 2011), transition *monitoring* (Diepenmaat & Taanman 2009, Taanman forthcoming), and several participatory tools such as *integrated system analysis* (Loorbach 2007) and transition *scenarios* (Sondeijker 2009).

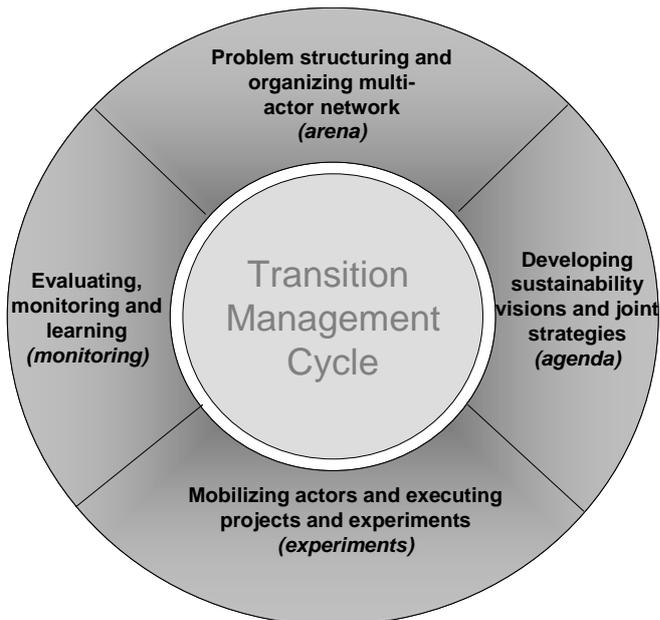


Figure 7. The TM-cycle, source: Loorbach 2007 (slightly adapted)

One of the most central elements in transition management concerns the set up of a so-called transition arena: “a multi-actor governance instrument [that] intends to stimulate and coordinate innovation through creating shared (new) problem definitions and shared long-term goals”, consisting of “a virtual arena, an open and dynamic network in which different perspectives, different expectations, and different agendas are confronted, discussed and aligned where possible” (Loorbach 2007:132-133). The overall principle is to focus primarily on ‘frontrunners’: individuals that are ‘ahead’ with developing new structures, cultures, and practices. These frontrunners need not necessarily be ‘niche players’, they can also be ‘enlightened regime players’, i.e. individuals who operate within a regime context, but use this position to develop or facilitate niches and alter existing structures.

Although the prescriptive transition management model ideally starts of with a ‘transition arena’ and sets up ‘transition experiments’ *after* a long-term goal and ‘transition paths’ have been formulated, there is no fixed sequence in these transition management activities: they are carried out “partially and completely in sequence, in parallel and in random sequence” (Loorbach, 2007: 115). Transition management is also used to “build on existing projects and experiments to *transition* these by broadening and scaling-up and (re)defining visions” (Loorbach: 291-292:emphasis added). Specific ‘transitioning instruments’ to ‘transition’ ongoing (innovation) projects have also been developed and experimented with (Gorris & Van den Bosch 2011, Van den Bosch 2011, Van den Bosch & Rotmans 2008).

3.1.4. Power in the transitions literature

In the introduction, I discussed the critique on transition studies for its lacking attention for power and politics, especially in the transition (management) literature (Shove & Walker 2007, 2008, Duineveld et al. 2007, Smith & Kern 2008, Smith & Stirling 2008,

Hendriks 2007, Meadowcraft 2007, Genus & Cole 2008). In the mean time, transition researchers have increasingly paid attention to the issue of power, partly in reaction to the criticisms cited earlier. Besides my own earlier attempts to conceptualize and study power and empowerment in relation to transition studies (Avelino & Rotmans 2009 Avelino 2009), there have been lively debates on power in transition in several dedicated workshops and conference sessions, new research programs and agendas, and quite a few publications on the politics of transition management. Moreover, in the earlier mentioned state-of-the-art book on transitions (Grin et al. 2010), the role of power often comes up. While the *implicit* references to power had always been obvious in much of the transition terminology (e.g. ‘regimes’, ‘niche-regime struggles’, ‘dominant practices’ etc.), the issue is now discussed in a more *explicit* manner. Nevertheless, I argue that several challenges remain for a consistent and clear integration of power in transition research. The different ‘schools’ in transition research use the word ‘power’ to refer to different phenomena; a ‘causal mechanism’ that explains individual motives (socio-technical perspective), the relative ‘strength’ of niches and regimes (systems perspective), or the ‘agency’ of actors in relation to structural change (governance perspective). In the following sections I specify how exactly the different ‘schools’ in transition studies approach the concept of power, what the remaining challenges are, and how this research strives to take up these challenges.

3.1.5. The socio-technical perspective on power

In the socio-technical perspective on transitions (Geels 2005, 2004, Geels & Schot 2007), power is primarily associated with regulative rules underlying socio-technical regimes, and the ‘power struggles’ between incumbent socio-technical regimes and upcoming niches. The socio-technical perspective has incorporated insights from structuration theory, process theory, and neo-institutional theory to include a concept of power in the analysis of socio-technical systems. In their article on ‘the typology of socio-technical transition pathways’, Geels and Schot (2007:415) distinguish four ‘foundational paradigms’ that conceptualize agency in different ways. *Power* is positioned as one specific ‘foundational paradigm’ that revolves around actors and social groups with “conflicting goals and interests”, and that views change as the outcome of “conflicts, power struggles, contestations, lobbying, coalition building, and bargaining” by and between these actors and social groups. In the state-of-the-art book on transitions, Geels and Schot (2010) position power as a ‘causal mechanism’ that explains the ‘individual moves’ of actors. In yet another recent publication, Geels (2010:496) characterizes power as a specific “ontology”, where ‘ontology’ refers to the “foundational assumptions about the nature of the (social) world and its causal relationships” that “postulate a certain causal agent and primary causal mechanism”. Geels distinguishes seven ‘foundational ontologies’:

- rational choice
- evolution
- structuralism
- interpretativism/constructivism
- functionalism (systems theory)
- conflict & **power** struggle
- relationism

Within this list, power is positioned as an ‘ontology’ in which the causal agents are “collective actors (groups, classes) with conflicting interests”, and in which the ‘causal mechanism’ is “conflict and power struggle between different collective actors” (Geels 2010: 497). Subsequently, Geels links the different ontologies to transition dynamics and sustainability transitions, contending that - from the perspective of the ‘power ontology’ - change “arises from shifts in the balance of power, which allow challengers to push through transformations of existing structures (accommodation of new demands) or overthrow incumbents (‘revolution’)”, and that change “becomes more likely if the economic growth of niches increases their political strength and bargaining power” (ibid:502). Subsequently, Geels states that “sustainability transitions in this [power] ontology may thus require either increasing pressure from public opinion on policy makers or further growth of ‘green’ niches into important economic sectors that can successfully lobby for further regulatory change” (ibid).

This socio-technical treatment of power differs from the way in which I will propose to conceptualize power. First and foremost, I object to Geels’ characterization of power as a specific ‘ontology’ or ‘paradigm’ that can supposedly be separated from other paradigms such as structuralism, functionalism, rational choice, etc. I argue that power is a social phenomenon that is often acknowledged in each of the abovementioned ‘ontologies’, and that these ‘ontologies’ all view power in specifically different ways. Rational choice views power in terms of actors (rationally) pursuing their individual interests; from an evolutionary perspective, power is an evolutionary product to deal with contingency and conflicting interests; interpretativism/ constructivism emphasizes the intimate relation between power, knowledge, and subjective interpretation; functionalism/systems theory tends to characterize power as the capacity of societal systems to realize collective goals; structuralism emphasizes the power of structures to predetermine the behavioral options of actors; relationism views power as a more diffused phenomena that lies in networks and relations between humans and artifacts; and so on, and so forth.

It therefore seems non-sensical to characterize power as *one* ‘ontology’ that can be separated from other ‘ontologies’. In fact, the power debates that will be elaborately discussed in section 3.2 revolve around *different ontological and epistemological perspectives on power*. By characterizing the power ‘ontology’ as one in which the causal agents are ‘actors and social groups’ and in which the ‘causal mechanisms’ are struggle and conflict, Geels undermines a great number of power perspectives that focus more on the structural and consensual face of power. Geels (2010:506) does acknowledge that the socio-technical multi-level perspective “does not provide detailed explanations of the sources and changes of power” and that “it could benefit from richer, multi-faceted views of power and conflict”, referring to authors such as Lukes and Foucault. However, by characterizing power as an ontology that is by definition about *struggle and conflict* between actors with different interests, Geels is in fact *excluding* various power perspectives that emphasize the more consensual, subtle, and hidden dimensions of power (such as Lukes and Foucault – see section 3.2), in which power can actually be manifested by the *lack* of conflict and struggle (e.g. through normalization).

Geels and Schot emphasize the disadvantage of theories that work within one specific paradigm, which leads to “reductionism, i.e. explanations that give undue emphasis to some type of agency, and that highlight some causal processes at the expense of other significant causes” (2007:415), and stress that socio-technical transition theory aims to include several different ontologies and paradigms. I could not agree more with this ambition. However, my argument would be that also within our treatment of power, we should acknowledge different ontological perspectives, rather than reducing the theme of power to one specific ‘ontology’ or ‘paradigm’. Moreover, we should be clear about what we mean when we use the concept of ‘power’, which happens often when we talk about the struggle between niches and regimes. While Geels and Schot characterize power as specific ‘causal mechanism’, it remains unclear what exactly they *mean* by power, and how this ‘causal mechanism’ can be studied in more depth. The contribution of this thesis can be seen in that light; a discussion of different ‘ontological’ and ‘epistemological’ perspectives on power, and an attempt to specify what power-in-transition means, how it is manifested, and how it can be studied.

3.1.6. Systems perspective on power

In the systems theory perspective on transitions, ‘power’ and ‘empowerment’ have become important concepts in the multi-level and multi-pattern frameworks. Therein, power is defined as “the proportion of the total functioning [of a societal system] that can be attributed to a constellation” (De Haan 2010:book II:27). A constellation is a subsystem that contributes to the functioning of the societal system, and consists of a specific combination of structure, culture, and practices. Regimes, niche-regimes, and niches are defined as constellations, and distinguished according to their relative ‘power’ in the system. Regimes are, by definition, the ‘most powerful’ constellations that dominate the functioning of societal systems. The ‘niche-regime’ (‘empowered niche’) refers to “a niche that has grown powerful enough to gain a number of new characteristics, most important of which is the ability to attack (sometimes effectively) an incumbent regime (and therefore to potentially take over from it)” (Loorbach and Rotmans 2010:136). In the multi-pattern framework, the so-called ‘empowerment pattern’ refers to a transition process in which niches ‘gain enough power’ to replace the regime; “niches emerge and cluster, and by empowering a niche cluster a niche-regime unfolds; the niche regime becomes more powerful whereas the regime is weakening, and in the end the niche-regime takes over the incumbent regime that is transformed” (Loorbach & Rotmans 2010: 2137, based on De Haan 2010).

I argue that there are several problems with the definition of power as ‘the total functioning of a societal system that can be attributed to X’, especially when it is applied to the interaction between niches and regime. First, this definition is based on a functionalist view of society that does not include actors, let alone attributes power to them. De Haan himself states that his systemic theory of transitions “is completely devoid of actors” (2010:book II:18). Second, this definition of power makes power inherently ‘zero-sum’; the total functioning in a societal system that can be attributed is finite, so therefore power is seen as finite, and thus, by definition, the power exercised by A goes at the cost of the power exercised by B. As will be discussed in section 3.2, such a zero-sum

interpretation of power is contestable at the least, and I will argue that it is particularly unsuitable in the context of transition studies. Third, this functional definition approaches power as a *quantitative* measure (i.e. the measure of ‘functioning that can be attributed to’). I argue that such quantitative measure suffers from ‘degreeism’: overuse of continua to explain variance between different empirical cases as quantitative rather than qualitative (Sartori 1991 in: Mossberger & Stoker 2001). Therein the distinction between niches, regimes, and ‘niche-regimes’ is essentially based on a *quantitative power continuum*; regimes have the ‘most’ power and niches have ‘less’ power, while ‘niche-regimes’ have ‘more power’ than niches, because they are defined as ‘empowered niches’ that are ‘powerful enough’ to attack the regime, and so on and so forth. While such a quantitative conceptualization can be useful in many ways – particularly for quantitative modeling of transition dynamics (De Haan 2010) – it entirely lacks a qualitative conceptualization of what power actually *means*. What does the exercise of power entail? What does it mean to be ‘powerful enough’? *How* is power exercised?

Moreover, the definition of power as ‘the total functioning of a societal system that can be attributed to A’, is conceptually equal to defining power as the ‘overall *impact* of A on society’. This definition fails to indicate the difference between the concept of ‘power’ on the one hand, and the concepts of ‘impact’ or ‘influence’ on the other hand. I argue that it is important to distinguish between power and mere ‘influence’ or ‘impact’. While influence and impact can be arbitrary and unintentional, power in a human context refers to the capacity to *achieve* something (to be elaborated in section 3.2). This is related to the distinction between *affecting* and *effecting*. While ‘affecting’ refers to altering or impinging on something in *any kind of way*, ‘effecting’ is about *accomplishing* something. As nicely formulated by Morriss: “those who affect others without effecting anything are rightly seen not as powerful but merely as nuisances”, and therefore: “to affect something (or somebody) but not effect (accomplish) anything seems, then, not to be an exercise of power” ([1987] 2002: 296). In that line of thought, the mere fact that A ‘impacts’ the functioning of a societal system does not mean that A has or exercises power, for the impact may be arbitrary and unintentional.

I argue that what makes the notion of power interesting – and what gives it its added value over general ‘impact’ – is the question *how* (and to what extent) actors can influence the functioning of a societal system to achieve a particular outcome. As such I argue that transition research needs a conceptualization of power that is actor-specific, and that provides for a *qualitative* distinction between the different ways in which actors exercise power. Such typology can then be used to make a *qualitative* distinction between regimes, niches, and niche-regimes. One of the most important contributions of this thesis will be to provide such an actor-specific, qualitative reconceptualization of the interaction between niches and regimes. Having said all that, there are also some elements in my power framework that correspond with the systems theory perspective as presented by de Haan (2010), and as referred to by Loorbach and Rotmans (2010). More importantly, there are several ways in which the different theoretical perspective could enrich and complement one another. I will come back to this and discuss possible complementariness in chapter 7, after presenting my theoretical and analytical framework on power in transition.

3.1.7. Transition management perspective on power and empowerment

Literature on transition management states that “the ultimate goal of transition management should be to influence and *empower* civil society in such a way that people themselves shape sustainability in their own environments, and in doing so contribute to the desired transitions to sustainability” (Loorbach 2007:284, emphasis added). Transition management is positioned as a process model that aims to ‘empower’ niches, by facilitating the ‘clustering’ of niches and the ‘emergence’ of niche-regimes that can eventually ‘take over’ and replace incumbent regimes (Loorbach & Rotmans 2010:145-146). It is also emphasized that an essential aspect of transition management is “the empowerment of frontrunners (...) [i.e.] providing them with multiple resources in order to be better equipped to play the power games with the regime” (ibid: 219).

There are several challenges in terms of better describing and analyzing the role of power and empowerment in transition management. One of the citations given above directly refers to the systemic and functionalist definition of power and subsequent characterization of niches, niche-regimes, and regimes (as discussed in the previous subsection). It is thus stated that transition management is about empowering niches and facilitating niche-regimes so that they can become ‘powerful enough’ to replace incumbent regimes. But it remains unclear what it means to be ‘powerful enough’, *how* niches are ‘empowered’, which *kind* of ‘resources’ frontrunners need to be provided with, what kind of ‘power games’ are played between regimes and niches, and so on. As discussed in the introduction, several authors have explicitly criticized the transition management literature for it lacking attention to power. Loorbach and Rotmans (2010:214) also admit that the “preliminary ideas on the role of power in transition processes need to be elaborated theoretically and empirically grounded in the coming years”. This is one of the main challenges taken up in this dissertation. After discussing the empirical insights of the case-studies (chapters 4-6), and after presenting the power-in-transition framework (chapter 7), chapter 8 will be entirely dedicated to the integration of power and empowerment insights into the transition management model.

3.1.8. Governance perspective on power

In the state-of-the-art book on transitions, the issue of power is most elaborately discussed in Grin’s governance perspective (Grin 2010, partly based on Grin & Miltenburg 2009). This governance perspective provides several basic insights regarding the issue of power. First, it emphasizes how power struggles are inherent to transition processes and how this should be approached as an opportunity for understanding how transitions can be influenced, rather than as a ‘bothering’ impediment to change:

Achieving power, legitimacy and trust is therefore as much part and parcel of governance work as achieving the system innovation as such. It would thus be unrealistic to see the two types of work as a bother to avoid. In fact, (...) one may make things easier on the other. It is therefore not only a misconception, or a risky expertocratic temptation, to see the politics of systems innovations and transitions as just a bother, as some of the literature on transition management

seems to do. Looking at this politics in this way also comes with a specific risk: that of missing out on the most interesting opportunities to deal with it (Grin 2010:236).

Second, the governance perspective couches transition studies in sophisticated social theory, incorporating insights on agency and structural change, as found in sociology and policy science. The challenge of transition governance is discussed in terms of agents' capacity of 'acting otherwise' (Grin 2010, in reference to Giddens), triggering institutional transformation by 'smartly playing into power dynamics at various layers' (ibid, in reference to Healey), and the properties an agent must possess 'to feel that she is able to resist' (ibid, in reference to Stones). Third, Grin links basic transition concepts, as found in the multi-level framework, to an existing multi-leveled power framework offered by Arts and Van Tatenhove (2005, based on Clegg 1989), arguing that the three levels of power distinguished by those authors – relational, dispositional and structural – correspond to the three levels in transition dynamics (niche, regime, landscape):

At the level of innovative practices [i.e. niche-level, F.A.], the focus is on relational power, which has to do with differences in competences and ability to draw on the regime between agents level. The regime embodies dispositional power, embodied in rules, resources, actor configurations and dominant images of the issues involved. This, in Bourdieuan language, "positions" agents at the level of experiments. These agents, in more Giddensian terms, may "draw on" these elements. Finally, at the landscape level we find structural power in the form of (Bourdieu) symbolic, social and economic capital or (Giddens) orders of signification, legitimization and domination. (Grin 2010: 282-283).

Grin's governance perspective on transitions 'opens up' the regime concept by addressing the issue of agency in relation to structures. However, I will argue that the interpretations of power by Giddens, Clegg and Arts & Van Tatenhove (as referred to by Grin) might not be the most appropriate, or at least not sufficient, to conceptualize power in relation to transitions. Even though Giddens is renown for conceptualizing agency and the ability of 'making a difference', his concept of *power* is to a large extent confined to existing structures of domination and agents' ability to draw on those effectively (Stewart 2001, to be discussed more elaborately in sections 3.2. and 3.4.). Moreover, the multi-leveled power framework offered by Arts & Van Tatenhove and Clegg, includes an inherently *vertical* typology of power, in which different types of power correspond with different levels of aggregation (agents, structures, systems). It obviously makes sense to couple this to the multi-level transition framework (as proposed by Grin), as this multi-level framework is also based on a vertical distinction between levels of functional aggregation (micro, meso, macro). However, I will argue that a *horizontal* power typology – distinguishing *different types of power exercise at the actor-level* – might be more appropriate to characterize the *qualitative* and *actor-specific* dynamics between niches, regimes, and landscapes.

Having said that, the power-in-transition framework that I will develop is not mutually exclusive with the way in which Grin conceptualizes power in the relation to the multi-level framework. On the contrary, the two can be seen as complementary, in the sense

that my actor-specific power framework will zoom in on certain elements within Grin's treatment of power. It is impossible to explain this comprehensively before actually presenting my power-in-transition framework. As such, I will come back to this issue in chapter 7, and precisely specify how my theoretical framework relates to Grin's approach to power in transition.

3.1.9. Remaining challenges for conceptualizing power in transition studies

So far the state-of-the-art overview of transition research, how it has dealt with power and empowerment, and what the remaining challenges are. Given the interdisciplinary and transdisciplinary ambitions of transition studies, an additional challenge is to develop a power language that both researchers and practitioners with differing disciplinary backgrounds can understand and use. Therein it is necessary to find a balance between sophisticated social theory on the one hand, and practical simplification on the other hand. The earlier mentioned different interpretations of power in the different 'schools' of transition research, are partly based on dissimilar approaches to conceptualization; deductive versus inductive, abstract versus concrete, theoretical versus practical, etc. While the systems perspective tends to be more deductive and the socio-technical perspective more inductive, the governance perspective tends to be more theoretical and the transition management approach more instrumental. As such, the challenge is to provide a flexible conceptualization of power that can be used for both deductive and inductive research, both theoretical and instrumental application. In section 3.4 I will start to take up this ambition. Before doing so, however, I first discuss ongoing academic debates on power and empowerment.

3.2. DEBATES ON POWER

Power is one of the most contested concepts in social and political theory. Definitions are manifold and highly diverse, ranging from power as 'actor-specific resources used in the pursuit of self-interests' (Weber in: Fuchs 2001) to power as 'the capacity of a social system to mobilize resources to realize collective goals' (Parsons 1967:193). This is why Lukes ([1974]2002:45) contended that power is an 'essentially contested concept', one of those concepts which "inevitably involve endless disputes about their proper uses on the part of their users", also adding that "to engage in such disputes is itself to engage in politics". According to Haugaard (2002:3) however, power is not so much an 'essentially contested concept' but rather a 'family resemblance concept' (see chapter 2, 2.2.1). Rather than trying to capture the essence of power in one, all-encompassing definition, the challenge is to construct a local language that is suitable in a specific context. And indeed, the challenge of this chapter is to present a conceptual power language that can be used in the context of transition research. This is done by first carefully considering the different 'family members' of the power concept, as discussed in social science literature. Rather than trying to give an overview of all power interpretations⁸, this section discusses some of the prevailing points of contestation in debates on power:

⁸ Giving an overview of power interpretations is obviously beyond the scope of this dissertation, and has been done by many others, see for instance Stewart 2001 or Haugaard 2002.

1. Power 'over' vs. power 'to'
2. Centered vs. diffused
3. Consensual vs. conflictual
4. Constraining vs. enabling (i.e. structure vs. agency)
5. Power = knowledge vs. power ≠ knowledge

As the essence of power cannot be captured, it logically follows that the essence of its *contestation* can also not be fully captured. The dichotomies mentioned above overlap with one another, and can thus not be perfectly distinguished, nor can different theories of power be fully 'categorized' in these terms. Several perspectives on power attempt to overcome at least one of the abovementioned dichotomies; by pointing out a third issue beyond a bipolarity (e.g. Luke), by turning a dichotomy into a duality (e.g. Giddens), or by integrating them as different dimensions in a multi-leveled framework (e.g. Clegg). The aim of this section is to learn how different authors have dealt with the abovementioned points of contestation, what we can learn from that, and, not to forget, which points of contestation can be added when dealing with power in transition.

3.2.1. Power 'over' vs. power 'to'

Even if one holds that 'power is *exercised* rather than *possessed*' (Foucault 1975), the question remains *what* is exercised; is it a capacity 'to' act / achieve something, or is it a social relationship in which A exercises power 'over' B? In this regard Morriss points out that power is derived from the Latin word *potere* - 'to be able' - and claims that in philosophical and linguistic terms, power "is always a concept referring to an ability, capacity or dispositional property" ([1987]2002:283). However, theories that focus on power as a capacity (as in Parsons and Arendt) are criticized for ignoring the relational or oppressive aspects of power 'over' others (Lukes 1974), or for "fail[ing] to account for individuals or groups in the community who, though they do *not exercise* power, nonetheless *have* power, in the sense that many people try assiduously to anticipate their reactions" (Dahl [1968]2002:20 in reference to Bachrach & Baratz 1962). The previous citation points to another question, i.e. to what extent power exists *before* its exercise; does an actor already have power if he or she has the *potential* to exercise it, or can an actor only be considered powerful once he or she actually *exercises* power?

According to Barnes, power is *both* "a potential or capacity which may or may not be used", *as well as* something that "is possessed" ([1988]2002:125), the relevant point being that power always "resides in the social context and outside its possessor" (ibid:127). Or as Clegg puts it; people "posses power only in so far as they are relationally constituted as doing so" (Clegg[1989] 2002: 257). The same could be said about the *exercise* of power; that it resides in the social context and outside of its exerciser, and that people only exercise power in so far as they are relationally constituted in doing so. Thus it seems that power 'over' and power 'to' are not mutually exclusive; both can be 'possessed' and 'exercised', and both are 'relationally' constituted in some way or another. One can argue that beyond philosophical and linguistic debates, the focus on 'possession' or 'exercise', 'relations', or 'capacities', is mainly an epistemological choice on how to study the *manifestation* of power.

3.2.2. Centered vs. diffused

A classical debate on power is the one between ‘pluralists’ and ‘elitists’. One side emphasized that elites possess power over society, while the other side stressed that political power concerns a struggle between plural interest groups. While Dahl (1958) criticized the ‘ruling elite model’ by pointing out that political power comes from broad decision-making processes, Bachrach and Baratz (1962) referred to the ‘second face of power’ to emphasize how elites are capable of predetermining agenda-setting before and outside the open process of decision-making, for instance by keeping certain issues *off* the agenda (also referred to as ‘non-decision making’). In addition, Lukes (1974) introduced a ‘third face of power’, referring to processes of preference-shaping. Therein certain groups shape the interests and preferences of other groups, as such not even having to keep issues ‘off the agenda’, as these issues are prevented from emerging in people’s minds in the first place.

This debate relates to Foucault’s statement that ‘the hierarchical, centralized notion of power as a King would have it or any other judicial-political entity is an outdated legacy from the past’, and to Mann’s distinction between authoritative power and diffused power. While authoritative power “comprises definite commands and conscious obedience”, diffused power “spreads in more, spontaneous, unconscious, decentred ways throughout a population, resulting in similar social practices that embody power relations but are not explicitly commanded” (Mann in: Stewart 2001:25). An essential trait of diffused power is ‘normalization’, i.e. the belief that certain practices are ‘moral’ or in the ‘common interest’, which relates back to Luke’s preference-shaping, and to various discursive interpretations of power as found in Foucauldian analyses (discussed more extensively in following sections).

3.2.3. Consensual vs. conflictual

As pointed out by Haugaard (2002), debates on power often revolve around the question whether power is consensual or conflictual. This relates to the question whether power is distributive or collective. In the distributive model, power is ‘zero-sum’, i.e. gained by one actor *at the cost of* another actor. In the collective model actors can enhance their joint power, as is the case in Parsons’ definition of power as the capacity of a societal system to achieve collective goals (1967:93), or in Arendt’s interpretation of power as “the human ability not just to act but to act in concert” (1958:200). These models are particularly ‘consensual’ because both Parsons and Arendt position consensus as a necessary condition of power. Parsons compared power to money, claiming that its meaning can only survive as long as society supports it, and that power diminishes when it is used illegitimately (similarly to processes of inflation). According to Arendt, violence can destroy power, but “is utterly incapable of creating it”, and “power and violence are opposites; where the one rules absolutely, the other is absent” ([1969] 2002:143). This starkly contradicts with Mann’s characterization of violence as “the most concentrated, if bluntest, instrument of human power” ([1986]2002:177).

Distinguishing violence from power does not necessarily take away the conflictual, physical, or oppressive dimensions of power. Quite on the contrary, the ability of oppressing *without* blunt violence is regarded by some as the essential characteristic of power. As Foucault puts it: “subjection is not only obtained by the instruments of violence or ideology; it can also be direct, physical, pitting force against force, bearing on material elements, and yet without involving violence; it may be calculated, organized, technically thought out; it may be subtle, make use neither of weapons nor of terror and yet remain a physical order” ([1975] 2002:192). According to Foucault, “power is a form of pacification which works by codifying and taming war through the imposition of particular knowledge as truth” (ibid: 185). This resonates with Luke’s preference-shaping, which challenges the Weberian premise of power as influence *in spite* of resistance. The capacity to make resistance dissolve – by shaping preferences – is understood as a decisive moment in the exercise of power. The distinction between ‘consensual’ and ‘conflictual’ power is therefore a tricky one, as power is characterized by some as the ability of *blurring* this distinction, either by turning a conflictual situation into a consensual one, or by preventing conflict from emerging in the first place.

3.2.4. Constraining vs. enabling

Power plays an important role in the agent-structure debate. The point of contestation is whether power lies mostly on the ‘agent side’ (as that which *enables* actors to make a difference), or on the ‘structure side’ (as that which predetermines and *constrains* the behavioral options of actors). Within certain debates, “power and structural constraint are theorized as *opposite ends* of a continuous spectrum. At one end of the spectrum social relations are contingent (...) whereas at the other they are determined (...) at the contingent end there is power (A could have acted differently) and, at the determined end, there is structure (A had no possibility of acting differently)” (Haugaard 2002:38, emphasis added). In contrast, Foucault has analyzed power as an inherently non-subjective phenomenon that it is exercised *by* structures and *through* actors, contending that “individuals are the *vehicles* of power” (Foucault 1980: 101). Foucault demonstrates how certain mechanisms ‘automize’ and ‘disindividualize’ power and how a material or ideological structure can be used for “creating and sustaining a power relation independent of the person who exercises it” ([1975]2002:196).

Giddens criticizes Foucault for not relating power “to a satisfactory agency and knowledgeability as involved in the ‘making of history’” ([1984] 2002:160).⁹ Giddens’ own theory of structuration aims to overcome the polarity between structure and agency, by

⁹ Although Foucault is often criticized for his ‘death of the subject’, Haugaard claims that this is contestable (2002: 209). Interpreting what Foucault meant by power can be considered a separate debate in itself, as authors frequently accuse each other of either misunderstanding or neglecting parts of Foucault’s work (e.g. Aladjam 1995, Borch 2005, Garcia 2001, Heiskala 2001, Infinitio 2003, Thompson 2003). This is further complicated by the fact that there is quite some difference and even contradiction between the ‘early Foucault’ and the ‘later Foucault’, and because at least one of the ‘Foucaults’ has explicitly emphasized that he does not aim to present a theory nor a model of power, but rather a ‘toolbox’ for studying power.

theorizing how structures are *both* enabling and constraining, and how agents make use of these structures in their daily practices, power being the capacity of agents to draw on these structures to achieve outcomes (Giddens 1984). Agency may be human but according to Clegg this is not *necessarily* the case; agency may be organizational rather than human, and it can also be exercised by a computer decision-making system (Clegg [1989]2002:250, 270-71). With his 'three circuits' of power, Clegg offers a multi-leveled model to theorize power as a complex interplay between agency, rules of the game at the organizational level, and structures of domination at the societal system level (consecutively referred to as 'relational', 'dispositional' and 'structural' power).

3.2.5. Power = knowledge vs. power ≠ knowledge

The relation between power and knowledge is one of the most contested relations in social theory (Garcia 2001). According to Bourdieu "the power to impose and to inculcate a vision of divisions, that is, the power to make visible and explicit social divisions that are implicit, is political power par excellence" ([1989]2002:142). Or in other words, by developing and communicating knowledge about society, one is exercising power. Barnes even *defines* power as 'the distribution of knowledge' within society, claiming also that "to possess power an agent must be known to possess it" ([1988]2002:126). The author explicitly distinguishes knowledge from individual belief, stating that "every individual in a society may be in error about some aspect of social power (...), so that none of them truly knows where power lies overall, and yet power will lie, necessarily, by its nature, where it is known to lie" (ibid:126). In a way, both Bourdieu and Barnes argue that *knowledge defines power*. This, however, is different from saying that *power defines knowledge*. To what extent power defines knowledge, is an age-old discussion, illustrated by notorious debates between 'Habermasians' and 'Foucauldians', and reminiscent of the differences between positivistic paradigms and postmodernism.

Although many would agree that power *can* distort knowledge, the point of debate is whether there still exists such a thing as 'truth' or 'knowledge' that is 'free' of power, i.e. whether it makes sense to speak of knowledge that is *not* defined by power. When Lukes argues that dominant groups shape perceptions and preferences in such a way that 'dominated' groups are 'unaware' of their 'real interests' (also referred to as 'false consciousness'), he is suggesting that there is such a thing as 'real' interests, i.e. an 'objective truth', that can be known and distinguished from 'false' and 'imposed' interests (Haugaard 2002:39). In contrast, Foucault argues that "we should admit rather that power produces knowledge (...) that power and knowledge directly imply one another; that there is no power relation without the correlative constitution of a field of knowledge, nor any knowledge that does not presuppose and constitute at the same time power relations" ([1975]2002:192). Giddens, however, argues that "Foucault's rehabilitation of the concept of power (...) is achieved only at the cost of succumbing to a Nietzschean strain in which power is seemingly prior to truth" ([1984]2002:160). Foucault and his 'followers' (e.g. Flyvbjerg 1998), are often criticized for their claim that power is always prior to knowledge, truth, or rationality.

3.2.6. Stability vs. change and the lacking dimension of time

So far, different points of contestation within previous and ongoing power debates have been discussed. Rather than ‘choosing sides’ within these debates or attempting to ‘solve’ them, the challenge is to develop a conceptualization of power that can be used in the context of transition research, while remaining sensitive to various dimensions of power as discussed in the literature. Before doing so, this subsection explains why the development of such a (partly new) power framework is believed to be necessary. Why not choose one or more of the power frameworks that are available in the literature? What, supposedly, is missing?

The main reason why I believe that it is necessary to construct a new power framework for transitions research, is that the majority of power interpretations, as found in the literature, seem to privilege stability over change. This can be related to a lacking dimension of *time* in much of social science literature. The lack of the temporal dimension in social theory has been addressed by various authors, who claim that “political science in particular, but also social sciences more generally, have become increasingly decontextualized” and that “a prime form of this decontextualization was the loss of an explicit theoretical treatment of time” (Pollit 2008:7)¹⁰. If time is ignored, it logically follows that stability is privileged over change, for static moments in time are by definition ‘stable’. When taking the dimension of time into account – as is inherent to transition studies – the occurrence of change (and novelty) becomes a fact. This is not to say that change is to be privileged over stability, rather that they should (initially) be treated equally. To what extent stability supersedes change – or visa versa – should be an *empirical* question, rather than being precluded in a *theoretical* conceptualization¹¹.

Unfortunately, this is not the case in the majority of interpretations of power. For even the more agent-based theories of power are unsatisfactory in terms of conceptualizing change (Stewart 2001:16). Giddens, for example, characterized power as being “generated in and through the reproduction of structures of domination” (Giddens 1984: 258). Even though Giddens has often been either applauded or criticized for privileging *agency*, the author’s interpretation of *power* remains in fact narrowly defined in terms of *dependence* on and *domination* of structures. As Stewart (2001:16, emphasis added) expresses it: “in spite of Giddens’ formal commitment to possibilities of ‘making a

¹⁰ It should be acknowledged that in political science, a far-developed account of long-term change is found in the punctuated equilibria model developed by Baumgart and Jones (1958). This account however focuses predominantly on political and institutional change. In transition studies, and in sustainability research more generally, long-term change is explicitly addressed as an interaction between technological, ecological, economic, political and institutional processes (Rotmans, 2003).

¹¹ Some may argue that stability is privileged over agency because empirical observations show that (human) nature tends more towards conservatism and stability, and less towards innovation and change. However, even then the fact remains that if we privilege stability over change in our conceptual models, we will likely focus on stability in empirical observations, and might miss out on instances of change, or at least underestimate them. Even if stability really does occur more than change, the relative proportion of ‘stability’ in relation to change might be overestimated.

difference', it effectively makes power a function of the distribution of resources, subject only to actors' capabilities to draw upon such resources effectively (...) [Giddens specification of power] makes socially transformative capacity substantially dependent upon '*existing*' structures of domination". The privileging of stability over change is also manifested in the majority of power typologies that are either *resources-based* (e.g. Mann 1986) or based on a *vertical* distinction between different levels of aggregation (e.g. Cleggs 1989). I argue that these typologies privilege stability over change, in the sense that they often focus on (the distribution of) *existing* resources, and/or on the relation between actors and *existing* structures, at a *specific point in time*.

In order to better understand the relation between stability and change - one of the main aims of transition studies - it is necessary to question and reconsider this tendency to privilege stability over change, also within a conceptualization of power. I propose that this can be (partly) done by using a *horizontal* typology of *different types of power exercise* (rather than a vertical typology of power levels). In such horizontal typology, the focus of analysis can be shifted to the distinction and dynamic interaction between 'power to change' and 'power to maintain', rather than focusing on the distinction and interaction between actors, structures, resources and systems at a specific point in time.

3.2.7. The need for an interdisciplinary and transdisciplinary power framework

Another reason why a new power framework is believed to be necessary is that much of the existing literature on power is problematic in the context of interdisciplinary, transdisciplinary, and interparadigmatic research fields (such as transition studies). Because of the many points of contestation as previously discussed, the literature on power tends to reach particularly high levels of abstraction and terminological subtleties. This is, of course, not a problem in itself, and may even be a welcome challenge for social scientists that focus their analyses on power, or dedicate their academic career to the creation of theoretical models couched in a sophisticated social theory. However, in interdisciplinary research fields that deal with many other issues besides politics, in which power is just *one* of many dimensions, these theoretical challenges cause power to remain under-conceptualized or ignored. As pointed out by Grin (2010), power tends to be seen as a 'bother'. This is further aggravated by the fact that many theories on power tend to privilege social construction over material realities. In a field like transition studies, where the physical and technological dimensions are at least as important as the political and culture ones, this is particularly unfortunate.

As argued by Inglis and Bone (2006), social scientists have tended to conceptualize matters "in rather 'traditional' and 'orthodox' ways, whereby the human- symbolic-cultural-phenomenal dimension is asserted at the expense of the natural- organic-noumenal properties of things". According to these authors, social scientists "too often have engaged in forms of 'disciplinary imperialism' so that domains traditionally ceded to natural scientists have been interpreted solely in the accustomed social scientific terms of the socio-cultural construction of things" (Inglis and Bone 2006: 284). I argue that it is (also) the task of social scientists to translate central issues in social theory, such as power, into a language that others can understand. Even if the epistemological choices in

empirical analysis are based on an interpretative paradigm and inspired by constructivism, as is the case in this dissertation, the basic concepts used to communicate the consequent results and insights need not be filled with constructivist terminology.

This is also relevant for the transdisciplinary dimension of transition studies, especially manifested in the instrumental application of transition management. How to translate abstract power insights into practical suggestions and tools that can be communicated to individual practitioners, *without* losing critical and reflective insights? In order to answer that question, I searched beyond the social theories on power as discussed so far, ending up in the more practical and actor-oriented discussions of *empowerment*, as found in management studies, organizational psychology, and critical theory. These insights are included in the new power framework. As such, before presenting this conceptual power framework, the next section will address this literature on empowerment.

3.3. LITERATURE ON EMPOWERMENT

Like power, empowerment has no agreed-upon definition and is often used to capture “a family of somewhat related meanings” (Thomas and Velthouse 1990:666). Generally speaking, empowerment refers to a person’s belief that “he or she can direct organizational events towards desired ends” (Elmes and Smith 2001:34). Rappaport (1987:122) defines empowerment broadly as a ‘process’ or ‘mechanism’ by which people and organizations “gain mastery over their affairs”. Authors disagree, however, on how to define the process *underlying* this ‘belief’ or ‘sense of mastery’.

While literature based on earlier research still defines empowerment in terms of delegating decision-making authority (Boje & Rosile 2001:93), recent research has defined empowerment in more psychological terms (Spreitzer et al. 1999:511) such as “perceptions of control” (Keller & Danserau 1995:129), “releasing the power within people to achieve astonishing results” (Randolph 2000:95) or “intrinsic motivation” (Conger and Kamungo 1988; Thomas and Velthouse 1990). This section discusses three different literature strands on empowerment: 1) organizational psychology (empowerment as intrinsic motivation), 2) management studies (empowerment versus hierarchy), and 3) critical theory (the paradoxes of empowerment and dependence).

3.3.1. Empowerment as intrinsic motivation

Building upon earlier work on the need for self-determination and beliefs in personal ‘self-efficacy’, Conger and Kamungo (1988) propose to view empowerment as a ‘motivational construct’, and define it as “a process of enhancing feelings of self-efficacy among organizational members through the identification of conditions that foster powerlessness and through their removal by both formal organizational practices and informal techniques of providing efficacy information” (474). Thomas and Velthouse (1990) develop this view further by relating empowerment to ‘intrinsic task motivation’ and ‘task assessment’. What distinguishes intrinsic motivation from extrinsic motivation, is that the effort being invested in the former is “not dependent upon the supervision of others nor upon rewards mediated by others” (ibid:673). Intrinsic task motivation

“involves positively valued experiences that individuals derive directly from a task” resulting from the cognitions about a task that produce motivation and satisfaction (ibid: 668). These cognitions about a task are labeled ‘task assessments’; the way in which individuals assess a ‘task’, defined as ‘a set of activities directed toward a purpose’, either assigned or chosen. The authors distinguish four dimensions of task assessment: impact, competence, meaningfulness, and choice:

- Impact: ‘I can make a difference’
- Competence: ‘I am good at what I do’
- Meaning: ‘I care about what I do’
- Choice: ‘I can determine what I do’

Impact refers to a sense of ‘making a difference’ in terms of ‘accomplishing’ and intended effect. Competence refers to the “degree to which a person can perform task activities skillfully when he or she tries” (ibid:672). Meaning concerns “the value of the task goal or purpose, judged in relation to the individual’s own ideals or standards” (ibid). Choice refers to self-determination and perceiving “oneself as the locus of causality for one’s behavior (as origin rather than pawn)” (Thomas and Velthouse 1990:673).

Another important contribution by Thomas and Velthouse is that they specify the *interpretive processes* through which individuals make their task assessments. These interpretative processes do not only depend on information about objective conditions and events, but are also subjective interpretations of reality, which in turn depend on ‘different interpretative styles’; how an individual *attributes* causal relations related to his or her actions, how he or she *evaluates* them based on certain standards of success and failure, and how he or she *envisions* the future in terms of visualizing or anticipating what could happen (ibid:675-676). As individuals are unaware of the effect of their interpretative styles, it is important to raise individuals’ awareness of the assumptions inherent to their interpretative styles, and to teach them to “consciously monitor these ongoing interpretations and their consequences” (Thomas & Velthouse 1990: 677)

3.3.2. Management studies on empowerment

Many articles on empowerment in organization studies start by emphasizing that the attention for empowerment has increased in the past three decades amongst researchers, managers, and business consultants. As more and more firms were involved in ‘empowerment programs’, the 90’s were seen as ‘an era of empowerment’, in which the empowerment of people was “clearly emerging as the organizational revolution of the 1990s” (Gandz & Bird 1996:383). Empowerment is believed to speed up decision-making in organizations, increase employee loyalty and overall productivity (ultimately resulting in higher profits) (Juhl et al. 1997:103), as such being a necessary condition for organizations to compete in the modern era of increased globalization, competition, downsizing, and acceleration (Quinn & Spreitzer 1997:37).

The ‘empowerment movement’ - both in academic literature and business programs - has faced various forms of criticism. It is characterized by many as the “emperor’s new clothes” (Argyris 1998: 98); an “elusive” concept (Quinn & Spreitzer 1997:37) with a “deceptive allure” (Eccles 1993: 13). As various empowerment programs fail or at least face major difficulties, many authors highlight the mistaken assumptions on which they are based, subsequently providing warnings and advice on how to improve our understanding and management of empowerment. Randolph (2000:95) points out that empowerment is “a strange combination of opportunity and risk” and that a shift from a hierarchical culture to a culture of empowerment is a long and difficult process. Not only are managers afraid of losing control, many subordinates are ‘afraid’ of being empowered as this also means more risks and responsibilities. While empowerment increases internal commitment – something believed to be beneficial and positive – “most of us have a history of exposure to command-and-control thinking (...) and are quite accustomed to operating in ways that are consistent with *external* commitment” (ibid:96, emphasis added). As such, empowerment requires both managers and subordinates to “learn new skills, new attitudes, new behaviors, new ways of relating, and even a new language” (ibid: 97). According Randolph empowerment and hierarchical culture differ in the following ways (see table below):

Hierarchical Culture	Empowerment Culture
Planning	Visioning
Command and control	Partnering for performance
Monitoring	Self-monitoring
Individual responsiveness	Team responsibility
Pyramid structures	Cross-functional structures
Workflow processes	Projects
Managers	Coaches / team leaders
Employees	Team members
Participative management	Self-directed teams
Do as you are told	Own your own job
Compliance	Good judgment

Table 3. Hierarchical culture versus empowerment culture (source: Randolph 2000:98)

Argyris (1998:102) characterizes external commitment (dominant in a hierarchical culture) as a ‘psychological survival mechanism’ for employees, “a form of adaptive behavior that allows individuals to get by in most work environments”. Most people fail to understand how “bewildering” and “threatening” internal commitment can be, especially for “those who have lived their entire lives by the rules of external commitment” (ibid:103). Moreover, many managers make the mistake of attempting to create internal commitment through mechanisms that actually enforce external commitment, such as incentive schemes, higher compensation, better career paths and recognition rewards. Not only do these systems of reward wear off with use; they also increase dependence (Argyris 1998:103). I summarize the difficulties of managing empowerment at different organizational levels, as discussed in the literature reviewed so far, in the table below.

Organizational Level	Factors that complicate empowerment
Top-management	'Imposing' empowerment within hierarchical structure
Mid-level managers	Not knowing <i>how</i> to empower and 'fear' of losing control
Employees	'Fear' of being empowered in terms of more risks and responsibilities

Table 4. Difficulties of 'managing' empowerment at different organizational levels

3.3.3. Critical theory on empowerment

Moving beyond management studies, we find fierce critics of empowerment discourse, which draw on postmodern and critical theory to claim that business practices geared at empowerment re-enforce current relations of power, and worsen the patterns of domination and dependence, as such being ultimately disempowering. According to these authors, the empowerment terminology "reduces conflict by emphasizing consensus and cooperation, through such terms as 'associates', 'team members', 'players', and 'coaches'", and this "reduce[s] the necessity of having to use more visible or coercive forms of power to ensure organizational goals are met and to quell resistance" (Hardy & Leiba-O'Sullivan 1998:466). These critical perspectives are skeptical about empowerment programs that do not address "material conditions of domination", and instead they emphasize empowerment in terms of "activism, spirituality, direct democratic governance, hybrid forms of modern and post-modern design, and ecological sustainability (...) critique of overproduction and hyperconsumption, and an ecocentric analysis of corporate practices" (Boje & Rosile 2001:93-94).

These empowerment-disempowerment debates between management researchers and critical theorists are partly based on the different ways in which the relation between empowerment and power is conceptualized. The tendency in empowerment literature to avoid or ignore the concept of power is a recurring point of criticism in critical theory (Hardy & Leiba-O'Sullivan 1998; Boje & Rosile 2001). While 'mainstream management researchers' refer to "the transitive use of the verb: to grant or bestow power", critical theorists "adopted the reflexive usage: to gain or assume power over someone else" (Hardy & Leiba-O'Sullivan 1998:475).

Some management researchers suggest that "power and effectiveness increase when superiors share power and control with their subordinates" (Keller & Danserau 1995: 127), or in other words, empowerment is believed to increase overall, collective power. Others emphasize that power cannot be shared or delegated, but only attained and exercised *from within*. See for instance:

We can confer authority; but power or capacity, no man can giver or take (...) I do not think that power can be delegated because I believe that genuine power is capacity (...) Power is not a pre-existing thing which can be handed out to someone, or wrenched from someone (...) Where the managers come in is that they should

give workers a chance to grow capacity or power for themselves (...) *The aim of every form of organization, should be not to share power, but to increase power, to seek the methods by which power can be increased in all (Follet in: Boje & Rosile 2001:90, 102, emphasis added).*

In this view, power is a self-developing capacity and it is thus impossible to empower others in terms of 'giving' others power. Unlike the earlier claim of critical theorists, various researchers that could be characterized as 'management researchers' do actually acknowledge this point.

For instance, Randolph (2000:95,99) stressed that many definitions of empowerment miss "the essential point that people already possess a great deal of power – power that resides in their knowledge, experience, and internal motivation" and that "people throughout the organization must acquire the skills and desire to use the power they [already] possess". Quinn and Spreitzer (1997:41) also underline that empowerment "is not something that management does to employees, but rather a mind-set that employees have". Managers can create a context that is more empowering but ultimately employees "must choose to be empowered", and "efforts that assume an empowered employee is a passive recipient of a brilliant program design are doomed. Empowered people empower themselves" (Quinn and Spreitzer 1997: 41).

Critical theorists, however, go one step further. First, they claim that relations of power depend on "one's location in the system", and that one cannot alter these relationships at the interpersonal level without changing the system (Boje & Rosile 2001:111, in reference to Clegg). Second, besides this impossibility of empowering others without-changing-the-system-as-a-whole, critical theorists warn that attempts to empower someone else "creates a dependence relationship which, by definition, is disempowering" (Hardy and Leiba-O'Sullivan 1998:469), and that "bestowing power only reinforces the dualism of powerful-powerless, thus ultimately maintaining the superior position of the powerful" (Boje & Rosile 2001:102). As such, critical theorists suggest that empowerment programs should be designed "to counter existing power relations that result in the domination of subordinate groups by more powerful ones", through a process in which "traditionally disenfranchised groups become aware of the forces that oppress them and take action against them by changing the conditions in which they live and work (...) not merely [through] participation, but often [through] resistance to, and conflict with, the governance structures" (Hardy and Leiba-O'Sullivan 1998:468-469).

These warnings about 'the dangers' of empowerment do not only concern 'suppressed workers' but also extend to managers. While empowerment programs tend to remove control from managers, psychological research shows that a sense of control is "necessary to individual well-being and integral to self-esteem" and that managers may therefore "experience distress and alienation as a result of empowerment" (ibid:472). The authors therefore suggest that critical research needs to "reorient its traditional concerns with 'workers' to include work involving managers, since empowerment may threaten managers, especially lower-levels ones, even more than employees" (ibid:475).

3.3.4. Remaining challenge: integrating empowerment and power

So far a short overview has been given of academic discussions on empowerment as found in organizational psychology, management studies and critical theory. As pointed out by critical theorists, one of the main problems in the empowerment literature, as found in management studies and organizational psychology, is that the issue of power and domination tends to be ignored. One of the main challenges in this dissertation is to relate managerial and organizational insights on empowerment to debates on power as found in social theory (as discussed in section 3.2.), and to subsequently integrate both empowerment and power within a change-oriented conceptual framework. The next section takes up this challenge.

3.4. A DYNAMIC AND FLEXIBLE CONCEPTUALIZATION OF POWER

The challenge of this section is to present a conceptualization of power that is suitable for transition research. The conceptualization should help to answer questions on how societal systems, at the level of regions or (sub)sectors, are transformed towards a more 'sustainable' direction, and what the role of actors is or can be in these processes of transformation. Considering the paradigms underlying transition studies, this means that the conceptualization should meet certain 'analytical criteria'. Inspired by the so-called integrated assessment paradigm the following 'analytical criteria' can be distinguished: interdisciplinary, interparadigmatic, transdisciplinary, intergenerational, and multi-level (see chapter 2, section 2.2.1.). This section is organized as follows. First, a conceptualization of power is presented, defining and distinguishing the following aspects of power: 1) meaning and definition, 2) resources, 3) typology of power exercise, 4) dynamics of power, 5) relations of power, 6) conditions of power, and 7) empowerment. The starting point is that even if power is a family resemblance concept, it is still possible and desirable to be clear about what we mean when using the word power, by providing working definitions of different power aspects, and consistently linking them to one another. At the end of the section, it is specified 8) how the presented conceptualization meets the 'analytical criteria' mentioned above, and 9) how it can be positioned regarding the 'points of contestation' in power (as discussed in section 3.2.). Special attention is given to 10) the contested relation between power and knowledge.

3.4.1. Meaning & working definition of power

For a philosophical meaning of power I follow Luhmann's interpretation of power as a *social medium of communication*. With 'philosophical meaning' I refer to an existential question: why does such a thing as 'power' seem to exist in society, what is the purpose of this phenomenon? In Luhmann's theory of society (1984), power is conceptualized as an evolutionary product within an evolutionary framework. Society is complex to such an extent that it cannot rely on spontaneous congruence of interests to deal with contingencies. Therefore, the medium of power is necessary to deal with contingencies and 'an unavoidable priority for further evolution' (Luhmann in: Borch 2005). In this evolutionary context, power is observed as a symbolically generalized medium of communication, just like 'truth', 'love', 'money', 'beauty', and so on. I choose Luhmann's

interpretation, mainly because it serves to emphasize that the only thing that the existence of power ‘dictates’ is that the medium of power is always available in society; *it does not predetermine how or by whom the medium is exercised*. Power is a social force just like gravity is a physical force. Like gravity enables us to be physically attached to earth, power enables us to be embedded in society. Power is as such an inherent part of society and the ‘human condition’. How, when, and by whom it is exercised, is inherently susceptible to context, time and, thus, change.

Moving on to a less abstract working definition, I define power as *the capacity of actors to mobilize resources to realize a certain goal*, as such following Parson’s definition (1967:93), but only *partly*. I remove the idea that resources are mobilized *by* the system: I conceptualize power as a capacity *of actors* (individuals, groups and/or organizational entities). I also remove Parson’s condition that the goal should be ‘collective’, or ‘for the survival of the societal system’, for the mobilization of resources may also be used to realize ‘self-interest’ (or even for goals that are - or turn out to be - in no one’s ‘interest’). The distinction between ‘common interest’ and ‘self-interest’ depends on the level of analysis, or even on political belief, and should not be inherent to any general definition of power. As pointed out by Giddens: “in associating power with so-called ‘collective goals’, Parsons sacrifices part of the insight that the concept of power has no intrinsic relation to that of interests” ([1984]2002: 160). This definition of power is consistent with its underlying philosophical meaning; the idea of power as a social medium and evolutionary product is *embodied* in the capacity of actors to mobilize resources¹².

3.4.2. Resources

What distinguishes this working definition from classical, instrumentalist interpretations of power, is the way in which the concept of ‘resource’ is defined. What is instrumental about classical definitions is not so much the central role of resources, but rather the narrow interpretation of ‘resource’ in itself. In many of the debates on power, ‘people’ and ‘beliefs’ are distinguished from ‘resources’; the term ‘resource’ is associated with the instrumental application of material capital, and contrasted with ‘structural’ or ‘discursive’ interpretations of power. I define resources more broadly as persons, assets, materials or capital, including human, mental, monetary, artifactual and natural resources:

Type of Resources	Resources
Human	Human leverage: personnel, members, voters, clients, supporters
Mental	Information, concepts, ideas, and beliefs
Monetary	Funds, cash, and financial stock
Artifactual	Apparatuses, products ¹³ , construction, and infrastructure
Natural	Raw materials, physical space

Table 5. Typology of resources

¹² Parson – like Luhmann – also stated that power is a symbolic *medium* ([1963] 2002: 106)

¹³ Including *artistic* products such as a song, a painting, or a movie. Mann (1986: 174) emphasized that aesthetic practices like a song or piece of art are an important source of ideological power

I propose this typology of resources to make a distinction that is as generic as possible, purposefully avoiding notions such as ‘economic’, ‘social’, ‘technological’, ‘ecological’, ‘political’, ‘organizational’ or ‘cultural’, in order to prevent theory-laden discussions on the exact distinctions between them, and in order to remove (mono-) disciplinary biases. There is no *inherent* hierarchy of relevance between the different resources; each type of resource can be the object of power to more or less extent. All resources are interrelated and in order to mobilize one type, one may need to make use of other types. Which resources are ‘more influential’ in a particular context is an empirical question, and this categorization of resources can be used too answer such an empirical question. Moreover, this can be related to other resource-based power typologies, such as Mann’s distinction between ideological, economic, military, and political sources of power (1986). Ideological power, for instance, can be characterized as the mobilization of ideas and people, and military power as a specific combination of artefacts and manpower (e.g. weapons and soldiers). Economic power refers to monetary resources in relation to other resources (‘goods & services’), whereas geo-political power predominantly refers to the capacity to mobilize natural resources, beliefs, and humans (see table below). This can also be related to Mill’s concept of ‘power elites’ (1956), in which the ‘most powerful’ actors operate at the intersection between economic, military, and political circles.

What is mobilised?	Resource Type	What kind of power is exercised?	
Information, concepts, ideas, beliefs	Mental		Ideological
Human leverage; personnel, members, voters	Human		Military / Physical
Apparatuses, products, construction, infrastructure Art (music, painting, photography, dance)	Artifactual		(Geo)-political
Raw materials, physical space, time, organic life	Natural		Economic
Funds, cash, financial stock	Monetary		

Table 6. Typology of resources related to Mann’s 4 sources of power (1986)

The common factor in the resources listed above is that they can be (individually) ‘owned’ in one way or another, which distinguishes the term ‘resources’ from institutional phenomena such as ‘rules’, ‘laws’, ‘culture’, ‘rituals’ or ‘traditions’; these cannot be ‘owned’. Not including these phenomena in the typology of resources, does *not* mean that the role of these phenomena in power is ignored. On the contrary, the existence of these institutions in itself *requires the exercise of power*. It thus becomes circular to argue that the exercise of power requires institutions. Even though this circular relation

between power and institutions may manifest itself in empirical reality, it is unsatisfactory to explain the *primary* sources of power. The conceptualization of resources as provided above serves to capture the *atomic objects* of power exercise, which is crucial to understand possibilities for change. These resources are in themselves ‘power neutral’; they only become power-laden when they are mobilized by actors to reach a certain goal. Phenomena such as ‘rules’, ‘laws’, ‘culture’, ‘institutions’, or ‘traditions’ start playing a role in the act of mobilization, i.e. the way in which power is exercised, which leads me to the next section.

3.4.3. Typology of power exercise

Moving beyond a resource-based discussion of power; instead of asking *what* is mobilized, I now focus on *how* resources are mobilized. Power being defined as the capacity to mobilize resources, a typology of power *exercise* can be made by distinguishing the *different ways in which one can mobilize* resources, and *the different levels* at which one can do so. On that basis five different types of power exercise are distinguished: 1) innovative, 3) destructive, 4) reinforcive, 5) transformative, and 6) systemic (see overview in the table below, to be explained thereafter).

Type of Power Exercise	Definition (capacity of actors to...)
<i>Level of resources</i>	
Innovative power	... invent and create new resources
Destructive power	... destroy and annihilate existing resources
<i>Level of structures and institutions (incl. paradigms)</i>	
Reinforcive power	... reinforce and reproduce existing structures & institutions
Transformative power	... invent and develop new structures & institutions
<i>Level of societal (sub)systems (i.e. a region or sector)</i>	
Systemic power	... enable and safeguard the survival of a societal system

Table 7. Typology of power exercise

Innovative power is the capacity of actors to create or discover new resources. This specific capacity seems to receive little to no attention in the literature. Debates on power - even the ones addressing possibilities for change - focus on the extent to which actors can or cannot gain access to *existing* resources, and ignore the capacity to create or discover *new* ones. I argue that the invention and creation of new resources can be seen as an act of power in and of itself¹⁴. This has been inspired by Arendt’s notion of *natality*,

¹⁴ Think for instance of ‘solar energy’ or an ‘electric car’. The invention and creation of these new technologies does not only provide new resources, it also makes actors that employ them *less dependent* on other existing resources, and thereby less dependent on physical structures and dominant actors that own and control those other existing resources (e.g. the oil industry). While

i.e. the human capacity to be original and create something new (1994:321, in:Gordon 2002). Arendt defines power as “the human ability not just to act but to act in concert”, emphasizing *visibility* and *plurality* as conditions of power (1958:200, in:Gordon 2002). Visibility and plurality distinguish innovative power from notions such as ‘originality’, ‘newness’ or ‘creativity’. A new idea or tool is powerless if it is not visible to plural actors. The ingredients of innovative power are thus natality, visibility, and plurality¹⁵.

Destructive power is the capacity to destroy or annihilate existing resources. Typical examples are militant or industrial actions that destroy infrastructure or natural resources, or the killing of people and animals. Destructive power is also exercised when an old building is blown up, trees are cut down, an organization is abolished, or when political or religious ideas are successfully eradicated. As such destructive power does not necessarily involve violence or physical force. Two ingredients of innovative power - visibility and plurality – also apply to destructive power; for destruction to be an act of power, it must be visible to others. While one could theorize that destructing a resource is ‘easier’ than constructing a new one, this is not necessarily the case, for destroying mental resources (e.g. an idea or belief) may be harder than inventing new ones.

Moving beyond the level of resources, we arrive at *the level of institutions and structures*. Institutions are broadly defined as formalized and / or broadly adhered to social rules and agreements – including laws, paradigms, norms or traditions –, while structures include organizational and physical infrastructures. It is at this level that we tend to predetermine how we distribute and value resources, in physical, ideological, and organizational terms. Physical structures, such as the transport infrastructure, predetermine how we literally distribute resources through space and time. On the other hand organizational structures, legal institutions, political and religious ideologies, shape the way in which we value and (re)allocate resources, as illustrated by a concept such as ‘capitalism’. At this particular level I distinguish between *reinforcive* power and *transformative* power.

Reinforcive power is the capacity of actors to reinforce and reproduce existing structures and institutions, thereby constituting the way resources are distributed and valued¹⁶. This relates to the so-called ‘structural’ interpretations of power as found in the literature

the example above deals with technologies, new resources can also comprise a new idea or a new local currency. Of course, the emergence of new resources is dependent on existing power relations and institutional structures, and it may aggravate power dependencies and/or create new ones. I come back to this in other sections. The point here is to acknowledge that the creation of *new* resources as a specific act of power that is can be distinguished from other acts of power that revolve around the struggle over *existing* resources.

¹⁵ By creating a new resource, an actor is *developing* innovative power. The actual *exercise* of innovative power (i.e. the ‘mobilization’ of this new resource) requires it to be *expressed* and *noticed*.by others.

¹⁶ In previous publications (i.e. Avelino & Rotmans, 2009, 2011), reinforcive power was referred to as ‘constitutive’ power. I have replaced the term ‘constitutive’ by the term ‘reinforcive’ in order to avoid confusion with 1) the more general use of the word constitutive as ‘formative’ or ‘creative’, and 2) other uses of the term constitutive power as referring to interpretations that emphasize how power ‘constitutes’ social reality.

discussed previously. The reason I call it *reinforcive* rather than ‘structural’ or ‘institutional’, is to emphasize that also this type of power is ultimately exercised *by actors* and *not* by structures or institutions. As such this definition does *not* follow Foucault’s statements that power is non-subjective, that it is exercised *by* institutions and *through* actors, or that ‘individuals are the *vehicles* of power’ (Foucault 1980: 101). Hereby it remains consistent with the initial working definition of power as a capacity *of actors*. This does not mean that it circumvents decades of agent-structure debates, nor do I claim to ‘solve’ any of it. Quite on the contrary, the point being made is that the agent-structure debate goes *beyond a definition* of power, and should therefore not be contained in it.¹⁷ I come back to this issue in section 3.4.9.

Transformative power is the capacity of actors to invent and develop new structures and institutions (be it a new legal structure, physical infrastructure, economic paradigm or religious ideology), thereby changing the way in which resources are distributed and valued. The starting point is that *developing* such new structures and institutions is an inherently *different* act than *reinforcing* structures and institutions, even though one may consecutively lead to the other. Much of the literature conceptualizes power as something that must inherently have a ‘long-lasting’ effect, and thus focuses on its ‘structural’ aspects. Theoretically speaking, however, an actor that succeeds in changing the way in which we deal with resources today *is exercising power today*, regardless of whether or not this change remains tomorrow. This transformative exercise of power may not be ‘enough’ to transform society ‘for good’, and one may need *reinforcive* power to *establish* the new structures and institutions. It is exactly the search for such conclusions that is interesting, which is made impossible if one includes structural aspects as an inherent, necessary condition of power. Transformative exercises of power need to be distinguished from *reinforcive* exercises of power, in order to study the relation between one and the other, rather than precluding this relation *within* a definition of power¹⁸.

Finally, *systemic power* is the ‘collective’ capacity of actors to mobilize resources for the survival of a societal system, i.e. a particular continent, region, nation, sector, industry or business (depending on the chosen level of analysis). The *extent* to which actors are able of mobilizing resources for the survival of a system, defines the level of ‘systemic power’ exercised by those actors within that system. Systemic power refers to ‘collective’

¹⁷ The agent-structure debate concerns the complex linkages between institutional conditions and human action, including temporal differentiations between one and the other (i.e. institutions and infrastructures outlive human individuals). In order to answer empirical questions on how actors mobilize resources – i.e. exercise power – through time, we should define and discuss the mobilization of resources before defining the relation to structures. Especially because different types of power exercise each carry a *different* relation to structures. For examples, the exercise of *reinforcive* power relates *differently* to existing structures than *innovative* power does.

¹⁸ The need to distinguish *transformative* power from *constitutive* power is comparable to the distinction between ‘inertia’ and ‘change’. In a way, change can only be proven by means of inertia and *visa versa*; the object of change has to be consolidated in a new state of stability before one can state that the change ‘has taken place’, while inertia is only fully ‘proven’ when change has been attempted without success. Yet in order to observe this relation between change and inertia, we still need to distinguish one from the other.

interpretations of power, and resonates with Luhmann's and Parson's original definitions of power (see section 3.4.1.). However, in this definition, power is not exercised *by* a system, nor is it necessarily exercised with the *intention* of 'realizing collective goals'. Rather, systemic power is the extent to which the collective mobilization of resources by actors within a societal system *amounts* to the surviving functioning of that societal system, *regardless* of whether or not these actors purposefully 'intend' to reach *collective* goals. As such systemic power is not necessarily consensual.

3.4.4. Power dynamics

Gordon used Arendt's notion of power to complement Foucault's weakness to deal with freedom and agency, stating that "Arendt's power is the potential that enables humans to break away, or more precisely, to disrupt the hold of Foucauldian power" (2002: 134). In the typology presented above, any type of power can be used to 'resist', 'disrupt' or 'break away' the hold of any other type of power. At the same time, the different types of power could also be used to 'strengthen' and 'enable' each other's grip. Both sides of any power struggle may be 'dominant', depending on the context. For instance, actors can resist transformative power by exercising reinforcing power, and *visa versa*. If actors successfully *resist* an attempt of other actors to invent and develop new institutions, they are 1) *resisting* transformative power and 2) further reinforcing existing institutions, as such being *dominant* in their exercise of reinforcing power. The opposite also applies: actors can *resist* the exercises of reinforcing power by being *dominant* in their exercise of transformative power. As pointed out by Clegg: "resistance to power may consolidate itself as a new power and thus constitute a new fixity in the representation of power, with a new relational field altogether" ([1989]2002:258).

There is also the opposite of resistance: different forms of power may *enable* and *enforce* each other. By creating a new resource (innovative power), an actor can *enable* the development of new institutions (transformative power), and *visa versa*. Reinforcing power can also enable transformative power: by *reproducing* a new institution one is facilitating the further development of this new institution. By using destructive power one can destroy a resource, but one cannot prevent that this particular resource is recreated and re-established. Through innovative power one can develop a new resource, but one cannot establish the long-term and widespread distribution of that resource. The latter requires either reinforcing power and/or transformative power to be able to use the necessary structures and institutions to distribute the new resource.

All forms of power can thus *both enable and restrict* one another from being exercised. When different types of power exercise mutually enforce and enable each other, I call this a *synergetic power dynamic*. When one type of power resists or prevents another, I call this an *antagonistic power dynamic*. Which side is 'resisting' or 'dominant', 'enabling' or 'restricting', depends on the chosen perspective in an empirical case, and on the starting point of analysis. This conceptualization of power dynamics, in which all types of power exercise can either enable or resist one another, can help to empirically analyze how different types of power exercise interact. For instance, the introduction of a new automobile technology can enable the further establishment of the current automobile

industry, and thereby prevent a replacement of the automobile system by a new public transportation alternative. This would be an example of innovative power that enables and supports reinforcing power, thereby, willingly or unwillingly, hampering the exercise of transformative power. Systemic power includes all other types of power exercise, and may be both enabled and restricted by them.

3.4.5. Relations of power

As resources may include human resources, power can consist of the capacity to mobilize *people*, thereby possibly exercising power ‘over’ them. This can be called a ‘relation of power’. There is, however, also another relation of power: person A can have ‘more’ power than person B, in the sense that A can mobilize ‘more’ resources than B can. Furthermore, there is a third relationship of power, which relates to the *type* of power: person A can mobilize different resources, or mobilize resources in a different way, than B does. For example, A exercises reinforcing power, while B exercises innovative power, or A exercises economic power, while B exercises geo-political power, etc. As pointed out by Dahl: “individuals or groups who are relatively powerful with respect to one kind of activity may be relatively weak with respect to other activities. Power need not be general; it may be specialized” (Dahl [1968]2002:12).

In summary, there is a distinction between three types of power relations: 1) A exercises power ‘over’ B, 2) A exercises ‘more’ power in comparison to B, or 3) A exercises a ‘different’ power than B. These different relations of power may coincide, but one does not necessarily follow from the other. If A exercise ‘more power’ in comparison to B, it does not necessarily mean that A has power ‘over’ B. And vice versa: if A has power ‘over’ B, it does not automatically follow that A has ‘more’ power than B in absolute terms. Moreover, each of these types of power relations can have various manifestations, ranging from mutual dependence, one-sided dependence and independence, to cooperation, competition and co-existence (see overview in table below).

Type of relation	Manifestation of power relations		
Power ‘over’	A depends on B but B also depends on A => A and B have power over each other	A depends on B but B does not depend on A => B has power over A	A and B do not depend on each other => A and B have no power over each other
	mutual dependence	one-sided dependence	independence
‘More / less’ power to	A exercises more power than B, but A and B have similar, collective goals	A exercises more power than B, while A and B have mutually exclusive goals =>	A exercises more power than B, A and B have independent co-existent goals
	cooperation	Competition	co-existence
‘Different’ power to	A’s and B’s different power exercises enable and support one another	A’s and B’s different power exercises restrict, resist or disrupt one another	A’s and B’s different power exercises do not (significantly) affect one another
	Synergy	Antagonism	neutrality

Table 8. Typology of power relations

Different interpretations of power correspond to different types and manifestations of power relations. Take for instance Weber's classical definition of power; "the probability that one actor within a social relationship will be in a position to carry out his own will despite resistance, regardless of the basis on which this probability rests" (Weber 1964:152). If A can carry out his/her will despite of resistance by B, this suggests that A has power 'over' B. This possibility inherently comes forth from a *dependence* that B has on A. The interesting thing to note is that *even* if B controls almost *all* resources, while A only controls *one* resource, A can still have power 'over' B to the extent that B is dependent on that *one* resource that *only* A can mobilize. This dependence can be either mutual (i.e. if A is also dependent on B) or one-sided. Whether a relationship in which A exercises 'more' or 'less' power than B results in 'conflict' or 'competition', depends on the extent to which the goals of power exercise are mutually exclusive. If A and B mobilize resources for a collective goal, or for goals that are independent of each other, then the relationship becomes one of cooperation or co-existence, rather than competition. The same counts for the exercise of different types of power; if A exercises power in such a way that it enables and supports the power exercised by B, there is a synergetic relation, whereas one can speak of antagonistic relation when A exercises power in such a way that it disrupts, resists or restricts power exercised by B.

3.4.6. Conditions of power

Having defined power as the capacity to mobilize resources, four conditions for the *exercise* of power can be deduced: 1) *access* to resources, 2) *strategies* to mobilize them, 3) *skills* to apply those methods, and 4) the *willingness* to do so. *Access* to resources refers not only to the possibility of attaining resources, but also to the awareness that those resources (can) exist, information on where they can be found (or how they can be created), and by whom they are or might be owned. *Strategies* refer to the methods that are applied in order to exercise power, including a wide variety of possibilities; formalization, physical force, propaganda, lobbying, networking, protesting, experimenting, ceremonial activities, voting, prohibition, subsidies, contests, business models, and so on. Strategies also includes the ways in which actors combine different types of power exercise in reaction to the (combined) power exercise of others, i.e. what kind of power relations they engage with, and how they play into a synergetic or antagonistic power dynamics. *Skills* refer to the human competences that are necessary to apply different strategies, e.g. disciplinary training such as legal or financial education, language and computer skills, public speaking, writing, rhetoric, argumentation, rationalization, improvisation, creativity, acting, informal conversation, and so on. *Willingness* refers to the will of an actor to exercise power, which includes the will to gain resources, to develop strategies and to acquire skills. Willingness is a crucial condition for the exercise of power (see next subsection on empowerment).

These conditions of power exercise can both *replace* as well as *complement* one another. For instance, if one has *access* to great amounts of money, one may not need to have the *skill* of legal training (and visa versa), yet in some cases one may be necessary to gain the other. Moreover, different types of access, strategies, skills and willingness are necessary for different types of power exercises (though they may overlap). The exercise of

innovative power requires different skills and strategies than the exercise of reinforcing power, and mobilizing monetary resources requires different skills and strategies than mobilizing human resources. Positioning strategies and skills as conditions of power, relates to those interpretations that emphasize the “strategic face of power, which relies on skilled analysis, deployment, and coordination to outmaneuver dominant actors with superior resources” (Levy & Scully 2007:986, in reference to Gramsci and Machiavelli). Clegg also stresses that power is “a tenuously produced and reproduced effect which is contingent upon the strategic competencies and skills of actors who would be powerful” (Clegg 1989:32, in: Levy & Scully 2007).

3.4.7. Empowerment

The conditions of power can be used to deduce a broad definition of empowerment as the *attainment* of these conditions. The ‘empowerment of an actor’ means that this actor attains the necessary access, strategies, skills, and willingness to exercise power. This attainment can occur both passively as actively, i.e. an actor can attain these conditions by him- or herself, or an actor can (help to) transmit these conditions to another actor. The opposite also applies; an actor can be disempowered by losing access, strategies, skills, or willingness, either caused by others, or by him or herself. In order to deepen and extend the definition of empowerment, I refer to the literature on empowerment as discussed in section 3.3. Therein, the willingness to exercise power does not merely refer to a ‘wish’, but also involves the *belief* that one *can* exercise power. This relates to the other conditions of power: access to resources, strategies, and skills. By gaining access to resources, by learning new strategies and skills, an actor’s willingness to exercise power can increase. However, it also works the other way around; an actor that is ‘willing’ has more motivation to gain access to resources, and to learn new strategies and skills. In order to unpack this ‘prior’, ‘original’ willingness, I propose to define it in terms of intrinsic motivation, postulating that the *intrinsic willingness to exercise power* follows from the following ‘positive task assessments’ (see references in section 3.3.):

- Impact: ‘I can make a difference’
- Competence: ‘I am good at what I do’
- Meaning: ‘I care about what I do’
- Choice: ‘I can determine what I do’

These positive task assessments do not merely depend on the resources, strategies or skills that actors have at their disposal, but also on the ‘interpretative styles’ through which they *attribute* causal relations related to their actions, how they *evaluate* them based on certain standards of success and failure, and how they *envision* and anticipate the future (Thomas & Velthuse 1990, see section 3.3). The most ‘prior’ source of empowerment is thus *interpretation*. It can be argued that such interpretation depends on *knowledge*, but it can also be argued that it depends on one’s ‘character’ or ‘personality’ (e.g. childhood, upbringing, spiritual inclination, or even genetic predisposition).

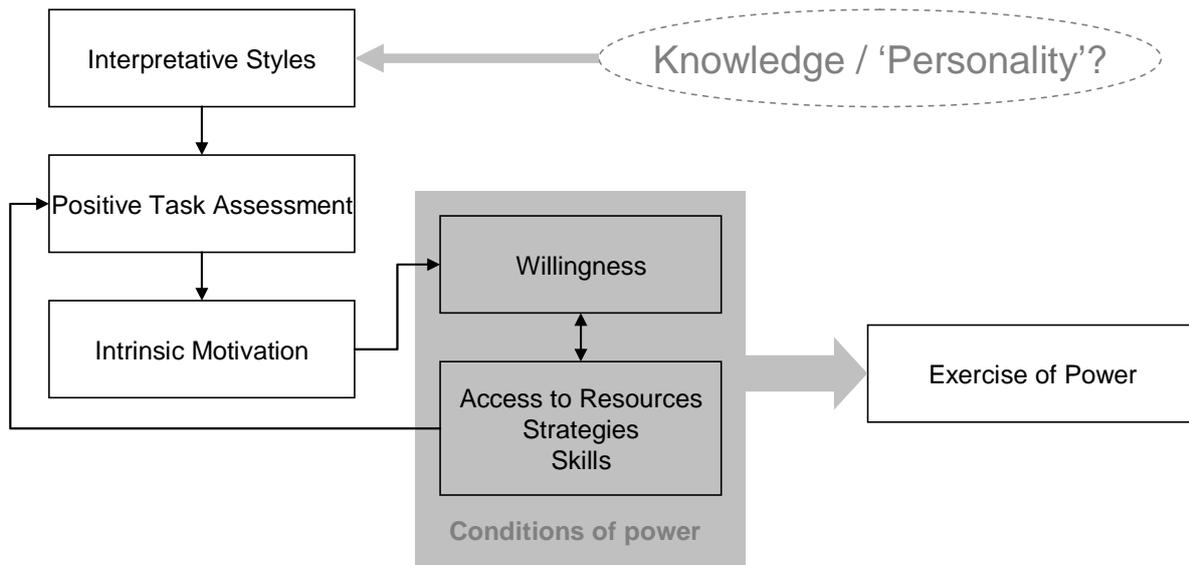


Figure 8. Schematic overview of psychological process of empowerment

In addition to this psychological interpretation of the process of empowerment, one can use managerial insights on empowerment (as discussed in section 3.3) to conceptualize how empowerment is *organized* and *managed* at different organizational levels. Therein organizational ‘culture’ plays an important role, in terms of ‘the shift’ from a hierarchical culture to an empowerment culture (see table 3, section 3.3.2). However, as pointed out by critical theorists, the concept of empowerment is inherently paradoxical. When empowering another actor by trying to transmit conditions of power (i.e. access to resources, strategies, skills, willingness) one may increase the dependence of that actor on oneself, which may be disempowering. Moreover, when empowering one actor, one may (willingly or unwillingly) disempower another actor. The lesson to be learned from critical theory is to keep in mind this paradoxical nature of empowerment; that it can lead to dependence, and that a seeming act of ‘empowerment’ (towards some) may actually turn out to be ‘disempowering’ (for others).

3.4.8. How the reconceptualization of power meets the analytical criteria

By placing power within an evolutionary framework, by acknowledging the whole range of resources through which it is exercised, by distinguishing between innovative, destructive, reinforcing, and transformative forms of power exercise, by conceptualizing processes of empowerment and disempowerment, power becomes an inherently *dynamic* and *flexible* concept. The presented conceptualization is dynamic in the sense that it explicitly includes change and transformation, and it is flexible in the sense that it provides a language that can be used in the context of interdisciplinary, interparadigmatic, transdisciplinary, intergenerational and multi-level research. This subsection specifies how the conceptualization of power meets these ‘analytical criteria’, (as set out at the beginning of section 3.4., and as explained in section 2.2.1.).

Interdisciplinary, Interparadigm and Transdisciplinary

The presented power framework aims to enable researchers, with different disciplinary backgrounds and dissimilar epistemological beliefs, to engage in a fruitful dialogue on power, and even to cooperate in the gathering of empirical data. Besides the 'flexible' way in which the relation between power and knowledge is conceptualized regarding different points of contestation (see sections 3.4.9 and 3.4.10), the most important conceptualization in this regard is the typology of resources, which explicitly aims to remove 'mono-disciplinary' biases. Instead of confining 'economic power' to the mobilization of 'money', an economist is given space to analyze how *all* the resources (mental, human, artefactual, natural and monetary) are produced, transacted, and traded, thereby contributing to the understanding of how power is exercised. And instead of limiting 'discursive' power to the mere mobilization of 'ideas', a social constructivist is allowed to study how *all* the resources are socially 'constructed', contested, and reproduced. Having a basic common power framework, the economist and the social constructivist can still compare their different findings, and discuss them with one another, thereby contributing to an interdisciplinary understanding of power.

This in turn aims to facilitate the communication between 'scientists' and 'practitioners', not only because different researchers can speak with 'one voice', but especially because researchers are challenged to translate their findings into a basic language that is not filled with disciplinary jargon. The conceptualization of power can be used to simplify and communicate findings, while still remaining sensitive to the complexity of power and its various dimensions. The framework provides several conceptual levels with differing degrees of complexity, ranging from a relatively simple working definition of power - as the capacity to mobilize resources to achieve a specific goal - to a more sophisticated typology of power exercise and dynamics, both of which can be extended, deepened, or operationalized with various disciplinary insights.

Intergenerational and Multi-leveled

The ability to discuss processes that extend several generations, and occur at a higher system level, is crucial for research on sustainable development. On the other hand, studying the short-term, local capacity of actors to make a difference, is just as important. As such the conceptual framework to be used does not only require temporal flexibility and systemic integration, but also the ability to study the interaction between short- and long-term processes, systemic and local levels. The presented conceptualization of power facilitates this need in several ways. First, the typology of power exercise conceptualizes power exercise at various levels, ranging from *resources* to *institutions and structures*, to the overall mobilization of resources in a societal *system*. At each of these levels, *power in itself remains a capacity of actors*. This allows us to link overall systemic power to the individual mobilization of resources, including institutions and structures as a distinct level at which actors constitute or transform the way in which resources are distributed and valued.

As alluded to earlier, the presented typology of power is primarily *horizontal* rather than *vertical*. Even though it includes a vertical distinction between different levels of aggregation (actors – structures & institutions – systems), power is always exercised *by actors*, thus consistently remaining at one level of aggregation in terms of *the entity that exercises power*. As a result, the focus of analysis can be shifted to a horizontal distinction between different types of power *exercise*. Rather than focusing solely on the interaction between ‘structural power’ and ‘individual power’, more relevance is given to the dynamics between innovative, destructive, reinforcing, and transformative power. The question is not so much whether structures have power over actors (or otherwise), but rather how change and inertia interact in the exercise of power by actors.

So far there has been a tendency in power debates to equate ‘structure’ with ‘inertia’, and ‘actors’ which ‘change’. The reason why structure is often associated with inertia mainly has to do with the *temporal* differentiation between institutional conditions and human action, i.e. institutions and structures ‘outlive’ human individuals. We thus tend to speak of existing structures exercising power ‘over’ us and hampering our possibilities to change. I argue that the equation between ‘structure’, ‘power’ and ‘inertia’ needs to be questioned. First of all, a structure or institution, e.g. democracy or any other rule that dictates the rotation of decision-making, can well be more change-oriented than a conservative individual. Second, most structures or institutions are in their origin man-made. By insisting on power as a capacity of actors, one can argue that an actor is exercising power ‘over’ future generations by constructing, or helping to do so, a particular institution or infrastructure, e.g. a legal constitution or a high way. By that time, once the road and the law are a fact and its constructors are dead, it may seem as if the law and the road ‘have’ power ‘over’ people, for it seems strange to claim that dead people can exercise power. However, this does not take away the fact that both the law and the road were initially a consequence of power exercised by human actors. Drawing attention to this aspect of power, i.e. that one can exercise it ‘over’ future generations, is an essential issue for debates on sustainability transitions.

3.4.9. Positioning power reconceptualization vis à vis points of contestation on power

This section specifies how the presented conceptualization of power can be positioned regarding the points of contestation in the literature on power (see section 3.2). Rather than ‘choosing sides’ in these debates, the ambition has been to provide a conceptualization of power that integrates various insights, and remains sensitive to the points of contestation.

Power ‘over’ and power ‘to’

“Everything that needs to be said about power can be said by using the idea of the capacity to effect outcomes” (Morriss [1987]2002:299). The capacity to mobilize resources to reach a certain goal can be ‘possessed’ - in the sense that one can ‘have’ this capacity and ‘own’ resources - *and* it is ‘exercised’ - in terms of actually mobilizing resources. The same counts for the question whether it is power ‘over’ (control) or power ‘to’ (act). The ‘capacity to mobilize resources’ contains an *act* (mobilizing resources) that

inherently includes a certain level of control *over* these resources (which may include other actors). Moreover, while debates on power often revolve around power as a relation versus power as a capacity, I argue that the capacity to mobilize resources *entails* three distinct power relations: 1) A exercises power ‘over’ B, 2) A has or exercises ‘more’ power in comparison to B, or 3) A exercises a ‘different’ power than B. The conceptualization of power thus is flexible in that it can interpret power in terms of both ‘possession’ and ‘exercise’ as well as ‘relations’ and ‘capacities’. Whichever aspect should be focused on is an epistemological question related to research focus and methodological operationalization (see section 3.5.).

Centered and diffused

In the new framework, power is inherently a ‘diffused’ and ‘pluralist’ phenomenon, in the sense that various actors can mobilize multiple resources in diverse ways in the pursuit of different goals. However, power can also be ‘centered’ and ‘elitist’; some resources may be primarily controlled by a small group of actors, a particular type of power may be mainly exercised by a certain group of actors, or certain strategies and skills can be limited to specific actors. Whether, how, and to what extent this is the case, is an empirical question. With regard to ‘non-decision-making power’, in which certain issues are kept ‘off the agenda’, this is conceptualized as actors *preventing certain mental resources from being mobilized*. In the presented framework, such ‘negative’ power, i.e. the *prevention* of power exercise, always involves a ‘positive’ exercise of power. For in order to keep an issue off the agenda, one must either get completely rid of this issue (destructive power), or claim that other issues are more urgent, either by emphasizing existing issues on the agenda (reinforcive power), by inventing a completely new issue (innovative power), or by developing a new paradigm (transformative power). Such ‘non-decision-making power’ is not necessarily ‘centered’ or confined to ‘elites’. All sorts of actors at all different levels may exercise non-decision-making and keep issues ‘off the agenda’, by avoiding these issues from being raised in their local context.

Consensual and conflictual

The capacity to mobilize resources for a specific goal can be both consensual and conflictual. Unlike some authors have argued, the definition of power as a capacity *to act*, does not exclude its conflictual or violent dimensions: “if we are interested in the ‘conflictual aspect’ of power, we can very easily look at someone’s power *to kick others around*, or their power *to win conflicts*” (Morris [1987] 2002: 299). Synergetic power dynamics (in which different types of power exercise *enable* one another) are consensual, while antagonistic power dynamics (different types of power exercise *resist* one another) are conflictual. Equally, some power relations tend to be consensual (e.g. cooperation, mutual dependence), while others are conflictual (e.g. competition). A more tricky issue is whether or not power is distributive/ zero-sum. The capacity to mobilize resources is only ‘zero-sum’ in so far as the resources and conditions (access, strategy, skill and willingness) are ‘zero-sum’. Although this sometimes seems to be the case (e.g. there are only so much subsidies to be distributed), the presented power framework leaves space for the argument that there are *always* resources that are not yet being mobilized, conditions

that are not yet met, or new resources that can be and are not yet created. The concept of systemic power (as the capacity of actors to mobilize resources for the survival of a certain societal system) is *collective*, but not necessarily consensual. For antagonistic power dynamics or competitive power relations may, in the end, contribute to systemic power. For empirical analysis, the most important lesson to be learnt from the literature is to be aware of conflicts that may be 'hidden' behind a seemingly consensual situation, but also the other way around, to acknowledge the consensual forces that in the end may give rise to conflict.

Constraining and enabling, structure and agency

Although power is defined as a capacity of actors, this does not exclude the constraining or structural aspects of power. First, the capacity to mobilize resources often entails the constraining of others, as has been extensively discussed in the section on power dynamics, in which each type of power may either enable or constrain another type of power exercise. Therein, the exercise of power can never be *only* constraining, as the constraining of one group of actors always involves the enabling of other actors. Therefore, whether a particular act of power can be characterized as enabling or constraining, depends on the starting point and taken perspective in a given analysis. For instance, while the implementation of a certain law (reinforcive power) may be 'constraining' for a certain group of actors, it does nevertheless 'enable' another group of actors to implement order. This leads us to the structure-agency debate, and to the question whether a 'law', or any other institution, can be considered to 'exercise' power.

As argued extensively, power has been defined as a capacity exercised by actors, and not by structures, institutions or systems. Moreover, different types of power exercise each carry a *different* relation to structures. For instance, the exercise of reinforcive power relates *differently* to existing structures than innovative power does. Having said that, agency-based notions of power as the one presented here are criticized for underplaying what Foucault described so eloquently; how certain mechanisms 'automize' and 'disindividualize' power and how a material or ideological structure can be used for "creating and sustaining a power relation independent of the person who exercises it" ([1975]2002: 196). In reaction to that, I argue that potential 'disindividualization' does not imply that power is not, in its origin, exercised by humans.

The fact that a soldier has power over me independent of which individual person is wearing the uniform, does not take away the way the fact that the army is still run, reinforced and reproduced by human actors who exercise that power with the intention of achieving a specific goal (e.g. safety, security, order). If the individual person wearing the soldier's uniform were to be doing whatever he does against his will, I would argue that his superiors are exercising power over him, and thus, indirectly, over me. Even if the soldiers were to be robots, some actor somewhere at some point is still in charge of the button and responsible for the production of these robots. If, potentially speaking, robots were to take over independently and act regardless of any human intention, I would

argue this not to be a case of power, but rather the total opposite: utter human *powerlessness*¹⁹. In that sense, the conceptualization of power presented here is confined to human power, i.e. not that of animals, natural forces, robots, or any other non-human phenomena.

3.4.10. Power & knowledge

Within my conceptualization of power, a narrow interpretation of knowledge would refer to the mobilization of mental resources (information, concepts, ideas and beliefs), which is (by definition) a specific type of power exercise. However, knowledge does not only have a “cognitive but also a performative significance” (Barnes (1988[2002]:123). Because, as Bourdieau points out, “the categories of perception, the schemata of classification (...) the words, the names which construct social reality as much as they express it, are the stake par excellence of political struggle, which is a struggle to impose the legitimate principle of vision and division” (1989[2002]:239). This means that by constructing and communicating knowledge, one is exercising power, not only in terms of ‘mobilizing mental resources’, but also in terms of influencing how other actors mobilize all other type of resources (human, artifactual, natural, and monetary). In order to know *which* resources to mobilize to reach a specific goal, and in order to know *how* to mobilize these resources, it is necessary to have knowledge about these resources. As formulated by Haugaard: “physical power is derived from a knowledge and manipulation of physical objects, while social power is based upon knowledge and membership of social systems” (2002: 113, in reference to Barnes 1988) and: “what enables actors to reproduce structure is their knowledge of social life” (ibid: 148, in reference to Giddens 1984).

Knowledge relates directly to the conditions of power: *access* to resources, *strategies* to mobilize them, *skills* to apply these methods and the *willingness* to do so in the pursuit of a specific goal. All four conditions depend to a large extent on having or gathering knowledge, which makes knowledge (on how to exercise power) a ‘meta-condition’ for the exercise of power. Conceptualizing knowledge as a meta-*condition* of power (i.e. something *prior* to power) may seem in contrast to Foucauldian, postmodern interpretations (see section 3.2.5.). This however is not necessarily the case. All that is being postulated here is that a) knowledge is a meta-condition to meet the four conditions of power (access, strategies, skills, and willingness), and b) creating or communicating knowledge is also a form of power exercise in itself (see figure below)

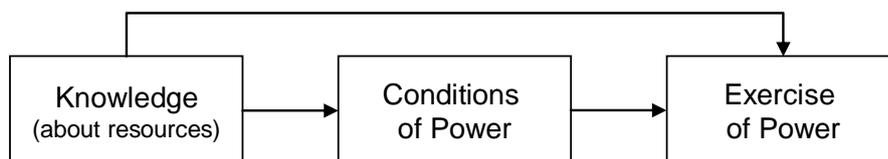


Figure 9. Linear relation between power & knowledge

¹⁹ The same counts for unintended consequences, e.g. a human actor hitting a button that sets free a crazy, morbid robot, either as an accident or because the consequences of the action were unknown. I characterize this as a deeply *powerless* act.

All that is necessary to make this model ‘work’ within a postmodern paradigm, is to *add* that knowledge is in itself produced, shaped, and constituted by the exercise of power:

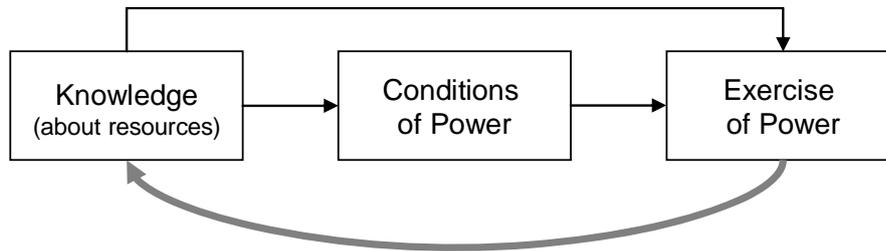


Figure 10. Recursive (Foucauldian, postmodern) relation between power & knowledge

The point is that, within an *interparadigmatic* dialogue between constructivists and positivists, it is still possible to communicate about the first figure (and to cooperate in the gathering of knowledge), without having to agree about the second figure (i.e. whether the recursive grey arrow should be there or not). The ‘postmodern arrow’ can be regarded as an additional insight, a deeper layer that does not necessarily dismiss or invalidate the other arrows (although it may regard them as superficial and incomplete).

3.5. USING THE CONCEPTUAL POWER FRAMEWORK FOR EMPIRICAL ANALYSIS

So far, power has been discussed in a highly theoretical, abstract manner, based on literature and deductive conceptualization. Now it is time to ‘operationalize’ these concepts for empirical analysis. As discussed in chapters 1 and 2, the empirical cases in this dissertation concern groups of actors (projects and programs) who have the ambition to transform (parts of) the mobility system in order to make it more ‘sustainable’. The aim of the conceptual power framework is to provide questions and analytical guidelines to study the role power and empowerment within these ‘transformative attempts’. Four basic empirical questions will be asked about a project or program under study: 1) *what is the transformative sustainability ambition*, 2) *how is power exercised*, 3) *how and to what extent are actors empowered*, and 4) *what is the overall transition potential?* In the coming section, each of these questions will be operationalized by specifying sub-questions and how these are answered in an interpretative manner.

3.5.1. What is the transformative sustainability ambition?

This question relates to the overall ambition and set-up of a project or program under study (i.e. the goal for which power is exercised), including the following sub-questions:

- *What is to be transformed: why, how and when?*
- *Who transforms?*
- *What’s new?*
- *How is sustainability dealt with?*
- *(How) is transition management applied?*

These questions are answered in an ‘interpretative’ manner in the sense that the focus is on how the *practitioners* under study *themselves* construct the answers to these questions. For instance, I do not decide ‘what is to be transformed and why’, but explore how a particular group of actors constructs its transformative ambition and problem definition. Equally, I do not ‘measure’ whether the approaches of the project under study are ‘new’ or ‘sustainable’, rather I critically explore how the actors present the novelty of their ideas and how they themselves deal with the concept of sustainability. The last question on transition management will be answered partly by considering to what extent the actors have applied the prescriptive transition management model, but also by describing how practitioners refer to the idea of transition management more generally; what they expect from it, how they struggle with it and how they value and criticize it.

3.5.2. How is power exercised and how are actors (dis)empowered?

Which resources are mobilized?	
<i>Type of Resources</i>	mental, human, artifactual, natural and monetary
Which types of power are exercised?	
<i>Innovative power</i>	capacity to invent and create new resources
<i>Reinforcive power</i>	capacity to reinforce & reproduce existing structures & institutions
<i>Destructive power</i>	capacity to destroy and annihilate existing resources
<i>Transformative power</i>	capacity to invent and develop new structures & institutions
<i>Systemic power</i>	capacity to enable and safeguard the survival of a societal system
What are the power dynamics/ how do the different types of power exercise interact?	
<i>Synergetic dynamics</i>	different types of power enable and support one another
<i>Antagonistic dynamics</i>	different types of power disrupt and restrict one another
Which power relations can be distinguished?	
<i>Power ‘over’</i>	mutual dependence, one-sides dependence or independence?
<i>‘More’ power to</i>	cooperation, competition or coexistence?
<i>‘Different’ power to</i>	synergy, antagonism or neutrality?
How and to what extent are the conditions of power met?	
<i>Access to resources</i>	possibility of attaining resources, information about resources
<i>Strategies</i>	methods applied to exercise power (e.g. lobbying, protest, debate)
<i>Skills</i>	competences necessary to apply strategies to exercise power
<i>Willingness</i>	willingness to exercise power for a specific goal
What is the level of intrinsic motivation (i.e. level of positive task assessments?)	
<i>Sense of impact</i>	‘I can make a difference’
<i>Competence</i>	‘I am good at what I do’
<i>Meaning</i>	‘I care about what I do’
<i>Choice</i>	‘I can determine what I do’
Which interpretative styles prevail?	
<i>Attribution</i>	attributing causal relations (related to own actions)
<i>Evaluation</i>	evaluating success and failure
<i>Envisioning</i>	anticipating future events and one’s role therein
To what extent is there a culture of empowerment?	
<i>Organizational Setting</i>	empowerment setting vs. hierarchical setting (management studies)
<i>Who is (dis)empowered</i>	paradoxes of (dis)empowerment (critical theory)

Table 9. Operationalization power & empowerment concepts for empirical analysis

The table above specifies which sub-questions are asked on power and empowerment, and how this relates to the different concepts and typologies in the conceptual power framework. To answer these questions the conceptualizations of power as presented in section 3.4. are applied to the case-studies. The most important aspect therein is how different types of power *interact* with one another, how actors play into these power dynamics and what type of power relations they have. The typologies and concepts presented in section 3.4 are used as guidelines on what to look for when analyzing empirical observations. As discussed in chapter 2, these concepts are used to *interpret* empirical observations, explicitly including the doubts that will inevitably come forth from such exercise.

The question on empowerment will invite us to dive deeper into the intrinsic motivation of actors involved and the organizational culture prevailing in the set up of the projects and programs. The last question on the culture of empowerment also applies insights from critical theory on the inherent paradoxes of empowerment, by studying how (unintended) disempowerment processes occur in the projects and programs under study. Moreover, it will be specified whether, how, and to what extent transition management seems to have an empowering and/or disempowering effect on the actors involved.

3.5.3. What is the overall transition potential?

This question discusses the overall ‘transition potential’ of the project or program under study. Here ‘transition potential’ literally refers to the overall power (i.e. capacity) of actors to enable and contribute to a transition. To what extent does the group of actors under study exercise power to enable a sustainability transition, and to what extent does it empower other actors to do so? This question also comprises a more speculative look at the potential *future outcomes* of the programs and projects under study. As all the case-studies under study concern relatively recent projects and programs that have the ambition to contribute to sustainability transitions, a large part of their activities revolve around future visions, proposals and plans. Moreover, many of the groups of actors studied did not so much consider themselves as those who would ultimately transform the system, rather they aimed to facilitate and enable others to do so, both now and in the future. Obviously, it is impossible that all these vision, plans and proposals would be implemented within the 4 to 5 years that these projects and programs were studied.

As such it is only fair to also consider the ‘legacy’ that these projects and programs leave behind and the potential outcomes that this may have in the future. In the empirical analysis this is not done by trying to ‘predict’ whether or not the visions, proposals and plans will or might ‘succeed’ in enabling sustainability transitions. Rather, the following hypothetical question will be asked: what *if* the future visions, plans and proposals as provided by the projects and programs *would* be realized... what kind of ‘sustainability transition’ would that be and how would power be exercised? Which future power relations are implied by these future visions, plans and proposals? To what extent do these envisioned power relations differ from current ones, and who would be empowered or disempowered by these new power relations?

3.5.4. Methodological challenge: distinguishing power from mere influence

One of the methodological difficulties with power is how to distinguish it from causality or influence. As pointed out by Dahl: “what makes causal analysis important to us is our desire to act on causes in the real world in order to bring about effects (...) to interpret the terms power, influence, authority, etc., as instances of causal relations means, however, that the attempt to detect true rather than spurious power relations must run into the same difficulties that have beset efforts to distinguish true from spurious causal relations” ([1968] 2002: 16). In this regard Lukes argued that:

behind all talk of power is the notion that A in some way affects B. But, in applying that primitive (causal) notion to the analysis of social life, something further is needed – namely, the notion that A does so in a non-trivial or significant manner”, for “we all affect each other in countless ways all the time: the concept of power (...) pick[s] out ranges of such affecting as being significant in specific ways ([1974] 2002: 45).

But how to decide whether or not the capacity of actors to mobilize resources and reproduce or renew structures and institutions, is ‘significant’? One of the most convincing distinctions between power and mere ‘influence’ is given by analytical philosopher Morriss, who provides an extensive linguistic and philosophical comparison of the two words, concluding that power “always refers to a capacity to do things (...) whilst ‘influence’ sometimes (and typically) does not” ([1987]2002:282). As such, the extent to which an exercise of power is ‘significant’, depends on the extent to which we find the goal for which power is exercised significant. As formulated by Morriss:

“the fact that we can rephrase many descriptions of events into statements about the exercise of power has led many social scientists (and philosophers) to misunderstand the significance of power, and to think that we are interested in the acts that people do because they are exercises of power, and not simply because they are acts of a certain sort. (...) whilst many events can be described as an exercise of power, we should only use the vocabulary of power if we are interested specifically in the *capacity* for producing events of this sort, and not if we are just interested in the events themselves” ([1987] 2002: 288-289).

Thus, in the context of this dissertation, the aim is not to analyze all acts and interactions that can be framed in terms of power, but rather, to analyze the *capacity* of actors to bring about or prevent acts and interactions in order to *accomplish a certain goal*, i.e. sustainability transitions

PART II

EMPIRICAL OBSERVATIONS

INTERMEZZO A.

Dutch Transition Discourse and Sustainable Mobility

Creatieve Energie
EnergieTransitie

"Naar een duurzame energievoorziening"

Home Projecten Actueel Wat is energietransitie? Hulp bij project Over ons Zoekvraag

Mobiliteit

Vervoer en transport is van levensbelang voor de Nederlandse economie, nu maar de verwachting is dat de olie schaarser en dus de brandstof duurder wordt. Bovendien is er een aanzienlijke uitstoot van CO₂, fijnstof en NOx. Een transitie naar duurzame energie is nodig om een gezonde transportsector te houden en op betaalbaar mobiel te blijven.

Mobiliteit

Naast energiebesparende technieken en alternatieve brandstoffen zoals biogas en elektriciteit en zijn ook nieuwe concepten nodig die bijdragen aan verduurzaming van transport en mobiliteit. Zoals dagranddistributie, intelligente transportsystemen, het Nieuwe Werken, Slim Leasen en Het Nieuwe Rijden. Allerlei voorbeelden van maatschappelijke en systeemveranderingen die bijdragen aan betaalbaar en schoon transport en vervoer.

Meer weten over mobiliteit? Neem contact op met ons. E-mail: info@creatieveenergie.nl Telefoon: 088-1234567

Nota Mobiliteit

Naar een betrouwbare en voorspelbare bereikbaarheid

Ministerie van Verkeer en Waterstaat

Rijkswaterstaat

30 september 2004

Ministerie van Verkeer en Waterstaat VROM

Green4sure

Het Groene Energieplan

Materieel en Milieu FNV ADVAKARD PVV GREENSPACE

EVERY JOURNEY HAS ITS PRICE

A POLICY STRATEGY FOR CUTTING TRANSPORT CO₂ EMISSIONS

JOINT ADVICE OF THE COUNCIL FOR TRANSPORT, PUBLIC WORKS AND WATER MANAGEMENT (RAAD VOOR VERKEER EN WATERSTAAT), COUNCIL FOR HOUSING, SPATIAL PLANNING AND THE ENVIRONMENT (VROM-RAAD) AND ENERGY COUNCIL (ALGEMENE ENERGIERAAD) TO THE NETHERLANDS GOVERNMENT

ABRIDGED VERSION

advies

05/01

Nota Mobiliteit

SER

This intermezzo provides the background context for the upcoming case-studies. Many observations will reappear in the case-studies, where they will be discussed in a more context-specific and nuanced matter. First, I generally discuss Dutch transition discourse and how the concept of ‘a transition to sustainable mobility’ was used. Second, I relate this discourse to the Dutch energy transition, and to emerging discourses on pricing policies and emission trading. Third, I address the Dutch mobility community and its prevailing transport discourse, focusing on its segregated and specialized nature, the dominance of neo-liberal economic and technological discourse, and the way in which the concepts of ‘power’, ‘leadership’ and ‘public support’ are referred to. Fourth, I address the question of how much and what kind of power transition discourse seems to have in the transport sector. I do so by discussing transition discourse as a particular form of ‘boundary work’ between science, policy and business. Finally, I clarify how the empirical case-studies can be positioned within the broader network of transition initiatives, and in the context of an ongoing emerging transition discourse.

A.1. DUTCH TRANSITION DISCOURSE AND SUSTAINABLE MOBILITY

In 2001 the concepts of ‘transition’ and ‘transition management’ were introduced in the 4th Dutch National Environmental Policy Plan²⁰. ‘Transition management’ was presented as ‘a strategy to deal with environmental degradation by stimulating sustainable development as a specific aim of policy making’ (Loorbach 2007, Kemp & Rotmans 2009). Four transitions were identified as necessary: 1) to sustainable energy, 2) to sustainable use of biodiversity and natural resources, 3) to sustainable agriculture and 4) to sustainable mobility. Subsequently, ‘transition-to-sustainable-mobility’ emerged as a combination of words that was increasingly used throughout the Netherlands. A variety of policy-makers, researchers, business- and NGO-representatives refer to this ‘transition to sustainable mobility’ in both written and spoken word. In addition to interviews and ethnographic fieldwork, I dedicated additional research to unravel these discourses through in-depth document analysis (Avelino & Kemp 2009, see also appendix III).

Discourse on ‘the transition to sustainable mobility’ was most commonly used in the context of the research program *Transumo* (an abbreviation for the TRANSition to SUSTainable MOBility). In 2003, the Dutch government decided to grant subsidies out of natural gas revenues to strengthen the knowledge economy in its innovative and societal needs, by improving the Dutch ‘knowledge infrastructure’ in fields with a specific societal relevance, including transport²¹. 38 Applied research consortia were funded through these gas revenue subsidies, which amounted to a total of 800 million Euros and a complex set of subsidy regulations, hereafter referred to as ‘BSIK’²². In some of these programs, transition management was (partly) applied. *Transumo* was one of them. While the discourse within *Transumo* will be extensively discussed in a separate case-study

²⁰ See document nr. 1 [appendix III]

²¹ Other fields considered as having societal relevance, besides transport, included water management, ICT, health care, agriculture, spatial planning, housing, construction etc.

²² ‘BSIK’ is the Dutch abbreviation for ‘Decision Subsidies Investments Knowledge Infrastructure’, a public subsidy-regulation which subsidised 38 programs. See: <http://www.senternovem.nl/bsik/>

(chapter 4), this intermezzo discusses transition discourse used more generally. *Transumo* was part of a wider Dutch ‘transition network’, which consisted of several organizations, institutes, programs, and partnerships that explicitly aimed to facilitate several ‘sustainability transitions’, not only towards sustainable mobility, but also to sustainable agriculture, spatial planning, energy, housing, etc. This transition network included the *Knowledge Network for System Innovation and Transitions*²³ (KSI, also a BSIK-program), the *Competence Centre for Transitions* (CCT)²⁴ and the *Knowledge Centre for Transitions* (KCT).²⁵ Several of these organizations were directly related to *SenterNovem*, the organization that implements various Dutch (national) policies on innovation and sustainable development²⁶. Together these organizations formed a ‘transition network’²⁷, with its own conferences, meetings, newsletters, websites etc. Being a researcher funded by the KSI-network and working at the *Dutch Research Institute for Transitions* (DRIFT)²⁸, I often participated in these conferences and meetings.

Within this ‘transition network’ it was often claimed that ‘the transition to sustainable mobility’ was ‘lagging behind’ compared to ‘other transitions’ (in energy, water, agriculture, spatial planning etc.). This related to the skeptical attitude towards ‘transition discourse’ of the government’s transport department within the *Ministry of Transport, Public Works and Water Management* (V&W). As explained by former employers of this transport department, transition discourses on ‘sustainable mobility’ were primarily associated with 1) the *Platform for Sustainable Mobility* (PDM) and 2) *Transumo*. While the *Platform for Sustainable Mobility* was part of the energy transition coordinated by the *Ministry of Economic Affairs* (EZ)²⁹, *Transumo* was mainly seen as an academic research endeavor, also referred to as ‘a hobby of professors’³⁰. As far as there was a discourse on the ‘transition to sustainable mobility’, the transport department of V&W did not have the ‘ownership’ over it, nor did it seem to want to have it. V&W had its own strategic innovation agenda, which operated quite separately from *PDM* and *Transumo*. At V&W’s bi-annual innovation event³¹, both *PDM* and *Transumo* were two out of many in a large display of innovative projects involving thousands of professionals.

This relative ‘weakness’ of transition discourse in transport policy is also reflected in the *Policy Document on Mobility* (‘Nota Mobiliteit’, hereafter referred to as the Policy Document), which was developed, presented, discussed, adapted, and formalized

²³ <http://www.ksinetwork.nl/>

²⁴ CCT aimed to develop and spread practical competences for managers of transitions and system innovations http://www.senternovem.nl/competentiecentrum_transities/

²⁵ KCT aimed to make knowledge on transitions applicable and was a formal cooperation between KSI, CCT and TNO (a large institute of applied knowledge scientific research: <http://www.tno.nl/>). In KCT the Dutch Research Institute for Transitions (DRIFT) cooperated with the department of TNO occupied with transitions & system innovations. <http://www.kenniscentrumtransities.nl/>

²⁶ <http://www.senternovem.nl/>

²⁷ <http://www.senternovem.nl/Transitienetwerk/>

²⁸ <http://www.drift.eur.nl/>

²⁹ <http://www.energietransitie.nl/platforms/duurzame-mobiliteit>

³⁰ Interview nr. 67 [appendix II], fieldnotes [informal conversation at several meetings, appendix I]

³¹ Fieldnotes ‘Dag van Maarsse’ [meeting nr. 97, appendix I]

between 2004 and 2006³². While earlier versions of this Policy Document explicitly mentioned the ‘transition to sustainable mobility’, the shorter ‘officially adopted’ Policy Document did not mention the words ‘transition’ nor ‘sustainable’, not one single time (Avelino & Kemp 2009). In earlier versions of the policy document the idea of ‘transition to sustainable mobility’ was used to discuss policy ambitions and long-term sustainability strategies. The renowned *Social-Economic Council* (SER) used transition discourse on transition mobility as an evaluative framework to discuss, praise, and criticize the Policy Document³³. However, when it came to finalizing and formalizing this Policy Document, the transition discourse completely disappeared (Avelino & Kemp 2009).

Meanwhile, the transition discourse on sustainable mobility was primarily ‘left to’ the *Platform for Sustainable Mobility* and *Transumo*. In the former, sustainable mobility was mainly one of many aspects in the transition to sustainable *energy*, with a subsequent focus on vehicle technologies and emission trading systems. In the latter, the transition to sustainable mobility was mainly a phenomena to be studied, monitored, and learned from, with a subsequent focus on specialized research projects (see chapter 4). As a result, the discourse on the transition to sustainable mobility was not so much linked to national transport policy or a comprehensive sector-wide vision of sustainable mobility, rather it remained confined to a fragmented ‘research topic’, and/or to one out many ‘transition paths’ in the transition to sustainable energy.

A.2. EMERGING DISCOURSES ON PRICING POLICIES

The way in which the discourse on ‘the transition to sustainable mobility’ was used in the context of the *energy transition*, can be seen as part of a wider emerging discourse on pricing policies and emission trading systems. Besides technological innovation in vehicles, fuels and ICT-applications, the members of the *Platform for Sustainable Mobility* were particularly enthusiastic about the idea of emission trading systems. On more than one occasion, different members of the platform publicly declared the need to implement tradable emission quota, not only at an international and national level, but also at the level of sectors, companies and individuals³⁴. The members of the *Platform for Sustainable Mobility* were not alone in promoting the application of an emission trading system in the transport sector. In May 2007, the four largest Dutch environmental NGOs, in cooperation with three labor unions, published the “Green4Sure” plan³⁵, in which they called for specific policies, amongst which an emission cap for the transport sector. This Green4Sure plan included an entire chapter that comments on ‘the transition policy of the government’, thereby referring to the energy transition specifically:

Until now the Energy transition is predominantly focused on the innovation process, new technologies for specific groups that are captured in transition paths. The attention is mostly supply driven and hardly geared at developing a demand for new technologies.

³² Documents nr. 2,3,4, and 5 [appendix III]

³³ Document nr. 6 [appendix III], see also: Avelino & Kemp 2009

³⁴ Fieldnotes [e.g. meeting nr. 110, appendix I]

³⁵ Document nr. 8 [appendix III]

Green4Sure distinguishes itself from the national Energy transition because it is geared at the instrumentation of the process of change and not only on the innovation of new technology. (...) after 4 years it has become clear that the common process of government, market and research institutes misses out on the bigger picture, namely creating a necessary change of the market conditions that are necessary for clean and efficient technologies. (...) Green4Sure creates the market for the innovative technologies of which the development has been initiated by the Energy transition. (...) The expectation is that the new market context created by Green4Sure makes it easier for market players to develop new technologies and introduce them on the market, so that there is less need to push the innovations (p.68) (...) [these] actions have the potential to result in a system innovation and to cause a transition in the energy system (p. 81)³⁶.

The Green4Sure plan aimed to fill the ‘gaps’ in the energy transition by ‘creating’ the necessary market for new technologies. This resonated with a report that was published in January 2008 by the *Council for Transport and Water* (“V&W Raad”), the *Council for Housing, Land-use Planning and Environmental Management* (“Vromraad”), and the *General Energy Council* (AER). In this report, which was called “Every Journey has its Price”³⁷, the three councils called for the implementation of a CO₂-emission trading system. Adaptations in the transport sector were viewed as one of the ‘transition paths’ to a sustainable energy system, mostly in the form of pricing mechanisms. However, the report also emphasized that the ‘transition to sustainable mobility’ was ‘broader’ than the reduction of CO₂-emissions, and required more than pricing mechanisms:

Despite of the fact that pricing mechanisms stimulate innovation, additional innovation policy is necessary for a transition to sustainable traffic and transport. Pricing mechanisms predominantly stimulate incremental innovation, such as better combustion engines. The transition to a sustainable traffic and transport may require more radical (system) innovations, such as a transport system based on hydrogen, large scale electrical transport or automatically operated vehicles. The dominant position of existing technology forms an important barrier for such innovation (...) Working on radical (system) innovations carries large risk, which is why market players are less inclined to invest in it. This makes explicit innovation policy necessary (p. 77).

Besides emphasizing the need for governmental policy, the councils also emphasized the important role of public private partnerships and platforms, such as the *Platform for Sustainable mobility*. The report also pointed out the limitations of the *Platform for Sustainability*, and explicitly called for a broadening of thematic focus:

(...) the Platform for Sustainable Mobility is still strongly focused on private cars. It would be desirable to broaden the focus to innovations in the fields of organization, logistics and spatial planning on the one hand, and a wider variety in terms of modalities on the other hand. The councils consider these type of platforms to be of utmost important to safeguard the continuity of the transition process, which takes much longer than the political term of a cabinet. Furthermore, these platforms play an important role in

³⁶ Green for Sure, pp. 68 and 81 [document nr. 8, appendix III]

³⁷ Every Journey has its Price [document nr. 7, appendix III]

signaling the barriers at the system level (for example laws and regulations), in advising strategic developments and in creating political support (p.79)³⁸.

The texts in these sections demonstrate how the four environmental NGOs and the three advisory councils all criticized the *Platform for Sustainable Mobility* and ‘the energy transition’ in general for focusing (too much) on supply driven technological innovation in personal mobility. While these NGOs and councils *praised and partnered* with the *Platform for Sustainable Mobility* in proposing to introduce a CO₂-emission trading system, they also emphasized that ‘the transition to a sustainable traffic and transport sector’ was *broader* than CO₂-emissions. In March 2008, the *Association for Environmental Professionals* (VVM) organized a meeting where all of the above parties were invited to discuss and compare the abovementioned reports³⁹. The meeting consisted of several presentations on the abovementioned reports by representatives of the councils and the NGOs, and a commentary on ‘the role of business’ by one of the Shell representatives of the *Platform for Sustainable Mobility*. The meeting carried a rhetorical question as its title - ‘are emission trading rights necessary for CO₂ reduction in transport?’ – and the forum discussion consisted of ‘yes, but’-answers to this question.

I discuss these discourses around the *Platform for Sustainable Mobility*, because it serves to demonstrate two important issues that will recur throughout this research. First, it demonstrates how transition discourse is used as a type of boundary work between several councils, NGOs and platforms (to be discussed further in section A.5). Second, it demonstrates the linkages between discourses on sustainable mobility, transitions and pricing policies. The case-studies in following chapters will demonstrate how pricing policies play a central role in the projects and programs under study. This was also the case in the discourse by the *Platform for Sustainable Mobility*, and other networks related to the energy transition. This suggests that the focus on pricing policies is not confined to the project and programs under study, but that it is part of a wider emerging discourse on pricing policies in the Netherland. I come back to this in section A.4.

A.3. POWER AND POWERLESSNESS IN PREVAILING TRANSPORT DISCOURSES

So far I have discussed transition discourse on sustainable mobility as observed in the Netherlands. But how can this be positioned towards Dutch transport discourse more generally? Obviously, transport discourse has been around for centuries and is much older than this rather new transition discourse. During my ethnographic journey through the ‘Dutch mobility community’ (see chapter 2), one of the first observations that struck me was the high level of specialization and segregation in this community. For each modality (rail, road, ship, air) and sub-sector (freight versus passenger, public versus private transport), there is a separate community with its own conferences, meetings, governmental departments, academic institutes, newsletters, lobby groups, trade-organization, etc. These different communities only meet each other at events that specifically deal with overlapping themes (e.g. ‘sustainable mobility’), and even at these

³⁸ Every Journey has its Price, pp. 36, 37, 77 and 79 [document nr. 7, appendix III]

³⁹ Fieldnotes [meeting nr. 110 appendix I]

'meta-level meetings' certain sub-communities clearly dominate over others. A particularly problematic segregation is the one between transport planning and land-use planning. While the systemic inter-linkages between one and the other are evident, the cooperation between the respective communities is not (to be discussed further in intermezzo B on mobility in the Southwing region). High levels of segregation and specialisation provide the perfect ingredients for sub-optimization. Therein discussions and visions on 'the mobility system' as a whole often consist of listing separate modalities, while ideas on how to integrate them (e.g. chain mobility) remain 'floating' as they seemingly fail to land in operational reality. Obviously, specialization and segregation are not unique to the transport sector, as these phenomena characterize most functional sectors in modern-day society. However, several observations indicate that the level of specialization and segregation, and the subsequent lack of an integrated vision, are especially high in the domain of transport. "There is no mobility system" was a comment often expressed in interviews, meetings and informal conversations. How could one possibly create a vision on something that supposedly 'does not exist'?

Considering the high levels of specialization and segregation, it is obviously problematic to generalize characteristics for 'the Dutch mobility community' as a whole. Nevertheless, there were a few commonalities observed in my ethnographic fieldwork, especially in terms of culture and discourse. A rather simplistic - yet not irrelevant – observation is the mobility sector as a world dominated by men, mostly in grey or black suits. At several meetings I was one of very few women, sometimes even the only one. This resonated with the prevailing professional transport discourse, best described as a technocratic mix of engineering and neo-liberal economics. Underneath this crude generalization lie several contrasts between different sub-communities, such as the differences between *passenger* transport discourse on the one hand, and *freight* transport discourse on the other hand. While the former includes ample managerial terminology and socio-political discussions, the latter is characterized by a down-to-earth 'no-nonsense' business attitude. Despite of these and other differences, the discourses still seem united in their focus on technology and economics.

Related to that, I noticed how many transport professionals tend to primarily have a 'facilitative' attitude towards other sectors and society at large. They see it as their task to 'facilitate' current needs for mobility and economic activity, not to question or change it. This also permeates governmental discourse on transport. In the policy document on mobility, an often referred to sentence is; "mobility is allowed!"⁴⁰. The concept of mobility is inextricably linked to freedom. Reducing transport is primarily seen as a reduction of individual freedom, hence proposing to do so is 'political suicide'. On the other hand, this concept of mobility as 'a basic right' was also challenged. At several meetings, this was mentioned as the main 'paradigm shift' that was necessary to enable sustainable mobility; supposedly we need to 'get rid' of the idea that mobility is a 'basic right'. Instead, 'the user should pay'. Citizens and companies are 'free' to travel as much as they like, as long as they *pay* for the costs, and such payment should be differentiated according to

⁴⁰ Translation from Dutch expression "Mobiliteit mag!" [document nr. 2 appendix III]

‘external costs’ (i.e. congestion and environmental effects). I observed how the field was increasingly permeated by this ‘new paradigm’ along the past few years, as ‘pricing policy’ was advocated in meetings and reports by more and more organizations.

Another observation was the way in which the concepts of ‘power’, ‘leadership’ and ‘public support’ were discussed in relation to mobility. On several occasions, transport professionals pointed to ‘power struggles’ and ‘vested interests’ as ‘the main problem’ in the transport sector. In interviews and conversations, when confronted with the open question why certain mobility innovations do not succeed, a standard answer was that ‘power (struggles)’ and ‘vested interests’ impeded innovation (rather than substantial shortcomings in mobility innovations themselves). The irony however is that when professionals were directly and explicitly asked about power exercised in the transport sector, they nearly always referred to the power of *others*. They all emphasized the power of other individuals, other organizations and other sectors, and the relative powerlessness of their own individual, organizational or sector-related capacities. The most obvious examples relate to the Rotterdam Port Authority, the government’s transport department (V&W) and large commercial companies (‘shippers’). Although these organization are often pointed out (by others) as particularly ‘powerful’ actors in the transport sector, their representatives primarily emphasizes the *powerlessness* of their own organization or sector. The Rotterdam Port Authority, for instance, has to compete internationally with other harbor companies, and therefore it is controversial and economically risky to select clients on the basis of ‘sustainability standards’. At V&W there was a sense amongst public officials that they mostly have to execute the strategic choices made by politicians, and that they have little influence on the public-private agreements made in political and industrial lobbying. While transporting companies (‘carriers’) emphasize their powerlessness compared to the production companies (‘shippers’), these shippers on their turn emphasize that they are powerless regarding the wishes and demands of ‘the consumer’. We thus observe a situation in which a group of professionals 1) emphasize the role of ‘vested interests’, while 2) emphasizing their own ‘lack of power’ and 3) pointing to other parties that supposedly have (more) power. A vicious circle seems to emerge, in which feelings of powerlessness and suspicion mutually enforce one another, causing a particularly rigid community. No one moves, every one waits.

Besides power and vested interests, a ‘lack of leadership’ and/or ‘lack of public support’ were also often mentioned during meetings and discussions. On several occasions the ‘democratic’ and ‘consensus-seeking’ political system – where decision-makers supposedly ‘hide behind’ public opinion and ‘lack the balls’ to impose policies – was brought up as the main barrier to mobility innovations. Quite often professionals pointed to other countries – mostly China, Japan or UK – as exemplary cases of ‘political leadership’, where the government supposedly ‘dares’ to impose top-down regulations and infrastructural projects, regardless of a lack of public support. This reference to ‘other national governments’ as being ‘more decisive or vigorous’ in public planning is ironic at the least, considering that the Dutch government is renown worldwide for its strong involvement in transport planning, land-use planning and water management. Also, it was striking to notice how many professionals seemed to believe that the only (or at least fastest and most effective) way to get public support (for innovative transport policies),

was through ‘a crisis’, e.g. an oil crisis or a natural disaster. When I attended meetings on sustainable mobility, I always waited for somebody to comment that “we need a crisis”, and often someone eventually did. Again this ‘crisis-thesis’ points to the earlier observed tendency to look for a source of power *outside* oneself, either in others persons or in exogenous events (i.e. a ‘crisis’).

A.4. THE POWER OF TRANSITION DISCOURSE AS BOUNDARY WORK

So far I discussed transition discourse on sustainable mobility, and prevailing discourses on transport more generally. Now the question is: what is the relative ‘power’ of transition discourse in the mobility context? Empirical observations demonstrate that the concept of a ‘transition to sustainable mobility’ is used in many different ways (Avelino and Kemp 2009). In the context of national policy, ‘transition to sustainable mobility’ is generally referred to a policy ambition and long-term sustainability strategy for the transport sector. In the context of the energy transition, the words ‘transition to sustainable mobility’ mainly referred to a specific transition path towards sustainable energy, primarily associated with the *Platform for Sustainable Mobility*. In the context of *Transumo* (as will be discussed in chapter 4), the ‘transition to sustainable mobility’ was approached as a desirable development in the transport sector that needed to be studied, stimulated, accelerated, managed, guided, monitored and learned from.

A.4.1. The multi-interpretability of transition discourse

The multi-interpretability of the ‘transition to sustainable mobility’ should not surprise us, for “coherence is not an essential feature of discourse” and “the political power of a text is not derived from its consistency (...) but comes from its multi-interpretability” (Hajer 1995: 44,61). This very multi-interpretability of the ‘transition-story-line’ helps to explain its appeal, for it enables everyone to attach its own interests and perceptions to it (Smith and Kern 2007). However, this multi-interpretability also weakens the transition discourse as “the interpretative flexibilities valuable for recruitment to the discourse coalition simultaneously undermine its influence by permitting very elastic use of the language” (Smith & Kern 2007: 15). Smith and Kern applied Hajer’s concepts of discourse-coalitions and story-lines to study the emergence and manifestation of transition discourse, as observed in the Dutch energy sector. The authors position the transition story-line as “an attempt to reinvigorate ecological modernisation” (ibid: 3), and discuss the extent to which the transition discourse succeeds in shifting actual policy practices in the Dutch energy sector. Although Smith and Kern state that transition discourse has the *potential* to ‘reinvigorate’ ecological modernisation, they conclude that it still has to prove its impact on policy, and that so far its manifestation “fails to induce institutional change with sufficient reach and depth”, as existing institutions and interests are downgrading the discourse (ibid:14).

To a certain extent, these worries are confirmed by empirical observations in my own research. In the government’s policy document on mobility, transition discourse was used to postpone the specification of long-term goals (by vaguely referring to long-term ambitions without specifying concrete targets), as critically pointed out by the SER-

council⁴¹. In the energy transition, the transition concept was used to promote technological innovation in car and fuel technology, and to promote the introduction of pricing mechanisms in the transport sector, such as a CO₂ emission trading system, without much consideration for other forms of transformative change. In some *Transumo* projects, we will see in chapter 4 how economic efficiency was expected to foster ‘less transport’ and thereby ‘automatically’ lead to environmental and social improvement, thus framing primary economic project goals as contributing to ‘the transition to sustainability’. We will also see how pricing policies are framed in transitional and transformative terms. These observations confirm the worries expressed by Smith and Kern that the more radical components of the transition story-line “lose out to ones accordant with neo-liberal discourse”, and that they are captured by “more powerful discourse associated with energy liberalisation and economic policy” (ibid:13-14)

While such observations are relevant and interesting, I argue that it is too early to draw conclusions on the relative ‘success’ or ‘failure’ of transition discourse in terms of its impact on policy. Transition ‘story-lines’, such as the one on sustainable mobility, are relatively new, and so are the different contexts, organizations and networks in which they are used. We see how different coalitions are forming around this story-line, each different coalition combining it with different story-lines. Some already developed discourse-coalitions (such as the ‘energy transition-coalition’ and the *Platform for Sustainable Mobility*), while others struggled to find a shared narrative (such as the participants in *Transumo*). These coalition-formations are part of a ‘broader’ discourse-coalition that is currently ‘in development’ in the Netherlands; the discourse-coalition around the general ‘transition’ story-line. Various organizations and networks are attempting to use a ‘transition’ story-line in combination with other story-lines, in order to formulate a transition discourse and form a discourse-coalition. Both processes – that of developing a broad ‘transition discourse’, and that of context-specific story-lines such as the ‘transition to sustainable mobility’ – occur simultaneously, both enforcing and weakening each other depending on their relative ‘success’. Rather than trying to measure the ‘success’ of the overall transition discourse in terms of its impact on policy, I propose to focus on *the way* in which transition discourse on sustainable mobility was used by actors, and I propose insights on ‘boundary work’ to interpret these observations.

A.4.2. Transition discourse as boundary work

The term ‘boundary work’ refers to the way in which actors construct a social boundary around ‘science’ (Gieryn 1983: 782). In order to gain and keep credibility, legitimacy, and authority for the scientific practice, scientists demarcate science from other practices such as religion or politics. But such boundaries are frequently blurred deliberately to facilitate boundary crossing and bridge-building (Hoppe 2005). Star et al. (1989) expanded boundary work by studying the demarcations between different scientific disciplines as well as those between science and society, and to that end the authors introduced the concept of ‘boundary objects’ as; “those objects that both inhabit several communities of

⁴¹ SER-council [document nr. 6 appendix III]

practice and satisfy the informational requirements of each of them”, further specifying the concept as follows:

“Boundary objects are thus both plastic enough to adapt to local needs and constraints of the several parties employing them, yet robust enough to maintain a common identity across sites. They are weakly structured in common use and become strongly structured in individual-site use. These objects may be abstract or concrete [...] Such objects have *different meanings in different social worlds* but their structure is common enough to more than one world to make them recognizable, a means of translation. The creation and management of boundary objects is a key process in developing and maintaining coherence across intersecting communities” (Bowker & Star 1999: 297)

These notions of boundary work help to discuss empirical observations on how a transition discourse on sustainable mobility was used in the interaction between different actors. To view these observations in the light of boundary work makes sense for several reasons. First, it was observed that transition language was especially popular amongst actors that operate at the intersection between science, policy making and consultancy, as well as between different sectors or scientific disciplines: councils, network organizations and all sorts of ‘interdisciplinary’ and ‘transdisciplinary’ research organizations. Secondly, the ‘transition approach’ was ‘co-produced’ by researchers and policy-makers (Kemp & Rotmans 2009). Referring to the ‘transition to sustainable mobility’ has a certain scientific ring to it that specifically appeals to those *advising* policy makers. In a way, the transition was used to *demarcate* ‘those who observe and monitor’ from those who ‘implement policy’. The *SER-council* used the notion of a ‘transition to sustainable mobility’ as a framework and standard to ‘evaluate’ the Policy Document: it criticized the parts of the document that did not give sufficient attention to the ‘the transition’, and it celebrated those part that did. Similarly, other advisory councils used transition discourse to emphasize that the energy policies proposed by the *Platform for Sustainable Mobility* were not ‘enough’ for the ‘transition to sustainable mobility’. *Transumo* and those who ‘monitored’ the program, also used transition discourse as an evaluative framework, and referred to ‘the transition to sustainable mobility’ as something which *Transumo*-projects ‘should contribute to’.

Besides the use of transition discourse to ‘demarcate’ those who monitor the contribution from those who are supposed to contribute, the ‘transition to sustainable mobility’ can also be seen as a *boundary object* that actors use to maintain coherence and a common identity ‘across the different sites’ of science, policy making and consultancy. It provides a common language for communicating with those across the boundary, in which one can for example ask what people ‘on the other side’ are doing for ‘the transition’. *Transumo* (as well as many other BSIK-organizations) worked with a so-called ‘tripartite’ format in which projects are subsidised and carried out by business, governments and research institutions. These participants have different backgrounds, interests, discourses and practices. The thing that ‘unites’ them is that they all are part of a program or project which is supposed to ‘contribute’ to ‘the transition to sustainable mobility’.

A.4.3. Transition as a boundary concept

Besides the use of ‘boundary objects’ to *cross* boundaries, the literature also points out the use of certain ‘boundary concepts’ to purposively *blur* boundaries. ‘Boundary concepts’ are defined as “mixed metaphors, discursive devices [that] blur boundaries and with that align different and possibly conflicting discourses and practices” (Metze 2007: 10). Jasanoff (1987 in: Metze 2007: 9) argues that “boundary-defining language not only serves the immediate interests of social and political groups, but, through the creation of new conceptual categories, opens the way for extending those interests in larger or new domains”. This is a mechanism of power, in the sense that actors “enact or do not enact [discursive] boundaries routinely or strategically to enable or constrain change” (Metze 2007: 6). An example of a boundary concept is ‘innovation’. Metze explains the crucial role of the innovation concept in Dutch policy practices, as the various connotations with ‘innovation’ serve to unite a large group of different stakeholder with diverging interests: “they blurred the boundaries between their practices and implicitly attached a variety of meanings to innovation – technological innovation, system innovation, innovation in the supply-chain, product innovation, and even consumers innovation – in this boundary concept. An ideal type (in this case a vision for the region) coincided with the concept of ‘innovation’ and made several coalitions possible” (2007: 10).

The notion of a ‘transition to sustainable mobility’ can also be regarded as such a ‘boundary concept’, i.e. a ‘discursive device that blurs boundaries and thereby aligns, or at least transcends, different and possible conflicting discourses and practices’. The use of transition concept can be considered as a type of boundary work, in which actors are purposively blurring the boundaries between science, consultancy and business, between different academic disciplines, between ‘technology’ and ‘organization’, and between the ‘long-term’ and ‘short-term’. We see this happening in the energy transition, where the language of ‘transition to sustainability’ is used to blur the boundaries between mobility and energy, and to align the interests of different stakeholders. We will see the same dynamic in the case-study of *Transumo*, where the ‘transition to sustainable mobility’ was explicitly used as a discursive tool to nearly ‘force’ project participants to blur the boundaries between the different projects, backgrounds, disciplines and specialisations.

Using the notion of ‘boundary concepts’ as provided by Metze, also serves to understand some of the more puzzling empirical observations on how transition discourse seemed to appear, multiply, diminish, vanish and reappear at different stages and levels of a deliberative process. In the government’s policy document on mobility, we see that the words ‘transition’ and ‘sustainable mobility’ increasingly appeared in earlier versions of the government’s policy document on mobility, and in council reports, but finally vanished from the ‘officially adopted’ policy document. In the context of the energy transition, the ‘transition to sustainable mobility’ was frequently emphasized in various written reports on transport related energy issues, but hardly mentioned during a public meeting in which authors discussed these reports. In *Transumo*, the ‘transition to sustainable mobility’ appeared as a dominant frame during program meetings and written project reports, but it was significantly less referred to within internal project meetings (Avelino and Kemp 2009).

A cynical interpretation of these observations would suggest that transition terminology was primarily used as ‘window-dressing’ by policy-makers, platform members and project participants, with a prime focus of gaining government subsidies and framing economic interests in sustainability terms. While such cynicism may be justified in certain cases, they may be unjustified in other cases. In the spirit of the interpretative research philosophy it is just as much a task to question cynical assumptions by exploring other explanations for a seemingly evasive use of language. Insights from the literature on boundary work and the notion of ‘boundary concepts’ help to do exactly that. Since the function of a boundary concept is, by definition, to blur boundaries and align different interests and discourses, then it makes perfect sense that the concept is used less to the extent that there are fewer boundaries to be blurred, and less diverging interests and discourses to be aligned. This explains why the transition word may be used as a boundary concept in an *earlier*, preparatory or development stages of a deliberative process (with the purpose of blurring boundaries and aligning different interest and practices), and why it may disappear, or at least significantly diminish, at later stages, once that purpose has been met. It also helps to explain why transition discourse may be used primarily in meetings or documents that concern *external* communication *across* boundaries, and that it is considerably less used for *internal* communication *within* boundaries.

This issue of boundary blurring brings us back to the concerns, as expressed by Smith and Kern (2007), that transition discourse is ‘colonized’ by more powerful discourses, thereby losing its innovating potential. The ‘blurring of boundaries’ and the ‘alignment of interests and discourses’ may favour dominant forces and impede structural change. However, empirical observations demonstrate that transition discourse on sustainable mobility was not *just* used to blur boundaries and align interests and discourses, but also to *demarcate* boundaries between critical observers and policy-makers, evaluators and project participants, council-members and business representatives. The use of transition discourse can thus be seen as a specific form of boundary work, which serves multiple functions; to demarcate, to cross *and* to blur boundaries, thereby empowering individuals to be constructive participants while *simultaneously* maintaining a critical distance. The metaphor of ‘mirroring’ can be used to illustrate the need for such multiple functions. For one actor to ‘hold up’ a critical mirror to another actor, there needs to be a certain demarcation of boundaries (who holds up the mirror), a point of crossing boundaries (the one holding up the mirror needs to come near another that is willing to look in it), and finally a certain level of blurring boundaries (both individuals involved need to look in the mirror and discuss whether they are seeing the same thing).

A.4.4. Transition discourse: Newspeak or Doublethink?

In my fieldwork, I met people who argued that transition discourse was primarily used as a means to gain subsidies, covering up other interests or ‘window-dressing’, that there was nothing ‘new’ about the concept and that it was ‘old wine in new bottles’, or a ‘new label for business as usual’. Both practitioners and academics criticized the ‘vagueness’ and ‘malleability’ of the transition and sustainability concepts, contending that this allowed for strategic interpretations and the circumvention of clear targets and

agreements. I also observed a certain ‘exhaustion’ regarding transition discourse, if only because of the tendency to stick ‘transition’ as a prefix or suffix to other words; *transition* management, energy *transition*, *transition* monitoring, *transition* experiments, *transition* scenarios, *transition* to sustainable mobility, and so on. During an informal conversation with a practitioner who expressed his critique of transition discourse, the question came up whether transition language was a form of ‘newspeak’, thereby referring to the formalised and standardized regulations that required project-leaders to formulate the contribution of their project in ‘transition terminology’. I was triggered by this question: to what extent is transition language a form of ‘newspeak’?

In its original form, as introduced in George Orwell’s novel *Nineteen Eight-Four*, *newspeak* refers to a government imposed language that is ‘designed to diminish the range of thought’. Ever since, *newspeak* is generally used to refer to as a ‘propagandistic language’ that is ‘deliberately ambiguous and contradictory’ in order to ‘mislead and manipulate the public’⁴². The concept of *newspeak* is also associated with the deliberate removal (i.e. censoring) of words that can be used to question or criticize the fictional totalitarian regime featuring in Orwell’s novel. In reference to these association, one can argue that – in its origin – transition language is actually the opposite of *newspeak*, as its introduction quite literally serves to *question* and overcome existing regimes, not only by specifically speaking in terms of resistance to and deviance from dominant regime structures, but specially by providing a language that conceptualizes system innovation, non-linear structural change and long-term dynamics (Kemp & Rotmans 2009). This new transition language serves to enable a paradigm shift, by blurring the boundaries that currently shape dominant paradigms, and by aligning existing discourses on innovation and change that have remained fragmented so far. The very language itself revolves around overcoming current dominant paradigms. However, the complicating and confusing factor is that actors belonging to these dominant structures seem to be happily ‘joining in’ on this transition language. When a language that is inherently meant to overthrow a regime, is spoken *by* this very regime, it turns matters slightly paradoxical.

In this regard, the notion of ‘doublethink’ - another concept introduced in Orwell’s novel – may be more appropriate to discuss transition discourse. Doublethink refers to “the power of holding two contradictory beliefs in one’s mind simultaneously, and accepting both of them” (Orwell 1949: 220). Again this notion has extremely negative connotations in Orwell’s novel as it refers to ‘telling deliberate lies’ that enforce the power of the regime and ‘forgetting any fact that has become inconvenient’ to this regime. While transition discourse – like most other discourses – does include a certain level of ‘doublethink’ in the sense of encompassing contradictions, it is used to *remind* actors of inconvenient matters rather than forgetting them. The empirically observed ‘exhaustion’ with regard to transition terminology can also be explained by the fact that it continuously demands critical reflection on the status quo, and a systematic discussion on the challenges of sustainability. Such discussions can be exhausting, especially because of the many contradictions and dilemmas inherent to the notion of sustainable

⁴² See for instance; <http://en.wikipedia.org/wiki/Newspeak>

development. In this regard ‘doublethink’ can also be positively viewed as a necessary and welcomed skill. While Orwell stresses the negative connotation of doublethink, F. Scott Fitzgerald highlighted the opposite with his famous words that “the test of a first-rate intelligence is the ability to hold two opposed ideas in the mind at the same time, and still maintain the ability to function” (in *The Crack-Up*, 1936). Although the transition discourse has been ‘blamed’ for such contradictory elements and ‘shape shifting’ (Shove & Walker 2008), this may well be one of its more empowering dimensions.

While the strive for rational consistency is one of the many luxuries bestowed upon academics, the use of language in practice exceeds such requirements, especially in the case of boundary work between science and policy-making. This relates to Hajer’s argument on extending discourse-analysis with a dramaturgical perspective, in which attention is given to more emotional aspects of the ‘performances’ that surround the use of a certain discourse (2005). In these performances, the creation of a collective language can be compared to a ‘leitmotiv’; “a universally recognizable musical theme that triggers a variety of listeners through associations with social phenomena that are known to all listeners” (Hajer 2005: 21-22). While a symbolic and ceremonial application of transition concepts is typically regarded as an evasive use of language without significant implications, the function of collectively creating meaningful associations and a common identity, might be one of the more important contributions of transition discourse.

A.5.POSITIONING THE CASES IN THE CONTEXT OF EMERGING TRANSITION DISCOURSES

In conclusion, I propose to think of transition discourse as a specific form of boundary work. Therein the notion of transition serves multiple functions of demarcating, crossing and blurring boundaries between policy-makers, researchers, commissioners, consultants, environmental NGOs and business representatives. Sometimes transition discourse is used in meetings or documents that concern *external* communication *across* boundaries, while remaining absent in *internal* communication *within* boundaries. In certain cases transition language is used in earlier development stages of a deliberative process, and disappears in more final stages of decision-making, once the purpose of blurring boundaries have been met. The transition words reappear when actors wish to demarcate, cross or blur the boundaries between science, policy and business. These multiple functions of transition discourse can empower individuals to be willing and cooperative participants while simultaneously maintaining a critical distance. Interpreting transition discourse as such a specific form of boundary-work offers an alternative to more cynical interpretations of the contradictions of transition language (e.g. ‘window-dressing’ or ‘subsidy-hunting’).

This characterization of transition discourse provides an important background for the upcoming case-studies. It is important to remember that the projects and programs under study are just a few out of many in a wider, emerging ‘transition network’. This intermezzo has sketched a broader picture of transition and transport discourse, thereby aiming to characterize the context in which the programs and project operate. When we visualize the position of the case-studies within the broader networks discussed so far, we can draw the following picture (see below).

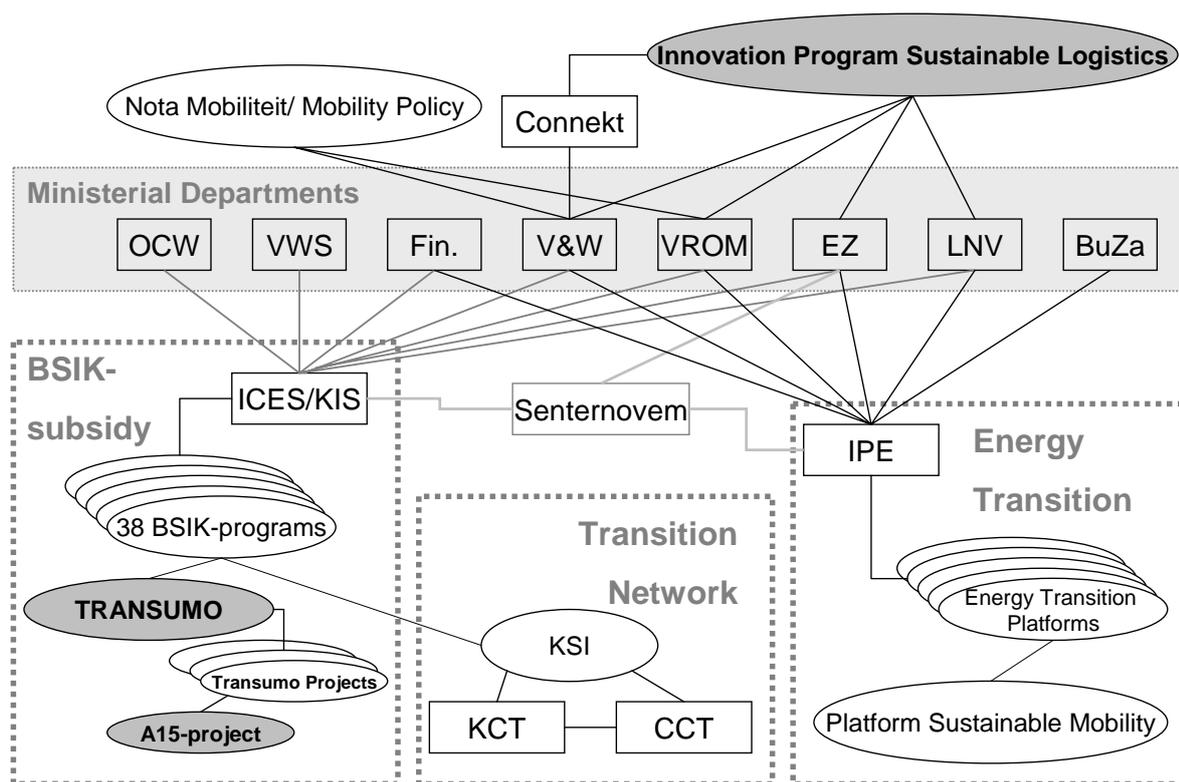


Figure 11. Contextualizing projects and programs under study (see index of abbreviations)

As we can see, the projects and programs under study (indicated with dark grey ovals) are part of a broad and complex constellation of programs and institutional bodies, involving numerous ministerial departments and other organizations. Several organizations, such as the research institute *TNO*, the *Erasmus University of Rotterdam* and the *Dutch Research Institute for Transitions*, are and have been involved in many of the abovementioned programs, platforms and networks, often in terms of advising or monitoring transition (management) strategies. There have been many more transition programs and projects that are not mentioned in the picture above, in other sectors (e.g. health care, spatial planning, agriculture, construction), and at the regional and local level. In the intermezzo on the *South Wing* region, I will discuss a regional project in which *Transumo* cooperated with another BSIK-program (*Habiforum*, focused on spatial planning), and with a provincial government.

Besides the focus of this research on a relatively small selection of programs and projects, it is also important to emphasize that the data-collection for these case-studies took place between the years 2005 and 2009. In the mean time, several things have changed in 2010 and 2011. The BSIK-subsidy ended, programs were finalized and ministerial departments were merged and renamed following the national elections in 2010. More importantly, the programs indicated in the picture above, and the cooperation amongst them, had several spin-offs in the form of new programs, projects, platforms and networks, both formal and informal. Finalized BSIK-programs like *Transumo* were followed up in new projects and future research agendas. In 2010 the insights, lessons and instruments developed in transition-programs were collected by the *Competence Centre for Transitions* (CCT), and presented on a website for 'transition practice', formulated in

accessible terms and available to all⁴³. The *Knowledge Network for System Innovations and Transitions* (KSI) was followed up by the international *Sustainability Transitions Research Network* (STRN)⁴⁴. The *Dutch Research Institute for Transitions* (DRIFT) has used its research on several of the abovementioned programs and projects to harvest numerous reports, publications and PhD-theses on transition management, and continues to research, facilitate and monitor new projects and programs in several sectors and regions.

But perhaps the most important spin-off to mention is the *Urgenda*.⁴⁵ The foundation of the sustainability NGO *Urgenda* in June 2007, was a direct spin-off of a cooperation between several BSIK-programs, and ever since the diverse sustainability initiatives and events of the *Urgenda* are spreading across the Netherlands. It is important to mention the *Urgenda* here, because many of the short-comings of the projects and programs under study – as will be critically scrutinized in the chapters to come – do not apply as much to the *Urgenda*. The *Urgenda* has a stronger primacy of civil society and entrepreneurs than the project and programs under study. It also exercises innovative and transformative power in a more pro-active way, explicitly mobilizing physical resources and developing new mechanisms to do so, such as collective purchasing and cooperative arrangements. Moreover, it invests much of its time and resources to empower small entrepreneurs and existing civil society initiatives. As such, the characterization of the projects and programs in this thesis' case-studies, is not representative for the overall transition (management) initiatives in the Netherlands, especially not those ongoing.

Having said all that, what is the reader to expect from the case-studies? As announced in the introduction, and as methodologically justified in chapter 2, these case-studies will zoom in on the micro-politics of particular projects and programs. Therein I use the concepts presented in chapter 3 to analyze how transition discourse was used at the operational level, how transition management was applied, how power was exercised, which power relations and power dynamics were in place, and the extent to which actors were empowered. The ultimate aim of this exercise is to learn from these case-studies, not only in terms of empirical transition management lessons (see chapter 8), but mostly in terms of improving conceptual and theoretical frameworks in transition studies (see chapter 7). In that sense, the contribution of this dissertation should not be seen in terms of empirically evaluating the 'power' or 'impact' of transition initiatives overall. Rather, the contribution is to provide a theoretical power-in-transition framework that is informed by empirical insights, and equipped to analyze the power dynamics in ongoing and forthcoming transition initiatives. This intermezzo on transition and transport discourse provides an important empirical context for doing so. In chapter 7 I refer back to the observations in this intermezzo at a more theoretical meta-level, discussing what we can learn from these observations in terms of theorizing the role of power and discourse in sustainability transitions.

⁴³ See: www.transitionpractice.nl

⁴⁴ See: <http://transitionsnetwork.org/>

⁴⁵ See: www.urgenda.nl

CHAPTER 4.

Case-study Transumo

The image shows a screenshot of the Transumo website. At the top, there is a navigation bar with the text "TRANSUMOFOOTPRINT" and "SPOREN VAN TRANSUMO". Below this, there are links for "Home", "Over ons", "Thema's & Projecten", "Contact", and "English". A search bar is located on the right side of the navigation bar.

The main content area is divided into two columns. The left column features a header "Transumo footprint duurzame mobiliteit" and a navigation menu with items: "WIE IS WIE" (with a person icon), "BIBLIOTHEEK" (with a book icon), "IN KAART" (with a map icon), and "PRODUCT" (with a document icon).

The right column features a header "Uitgelicht" and a featured article titled "DE NIEUWE RUIMTELIJKE ORDE: VERBONDEN MENSEN EN VERSTRENGELDE ACTIVITEITEN". The article is dated "December 2009" and lists contributors: Flor Avelino, Josee van Eijndhoven, Cilian Terwindt, Toon Zijlstra, Jan Rotmans, Derk Loorbach, and En de Zuidvleugel arena. The redaction is attributed to Josee van Eijndhoven.

Below the article text, there is a section titled "TRANSUMO" with a grid of four small images showing different urban planning scenarios. The text below the grid reads: "VERSCHILLENDE INRICHTINGSVORMEN VERSCHILLENDE INRICHTINGSVORMEN BESWAAN NAAGT ELKANDER..."

At the bottom left, the Transumo logo is displayed, consisting of a stylized blue 'W' shape above the word "Transumo" in a blue sans-serif font.

4.1. OBSERVING TRANSUMO

4.1.1. Transumo's background and context

Transumo is one of the 37 innovation programs subsidised by the BSIK natural gas revenues⁴⁶. Transumo is an abbreviation for 'TRANSition to SUsustainable Mobility'. Its main ambition was "to accelerate/encourage the transition to sustainable mobility" by establishing a new knowledge-infrastructure⁴⁷. For this end it facilitated over 150 organizations from public, private and knowledge sectors to collaborate in applied research projects on sustainable transport. The program was started in 2004 and finalized at the end of 2009. It had a turnover of 60 million Euros, of which 50% was provided by Transumo through government subsidy, and the other 50% by project participants. The overall organizational structure of Transumo is visualised in the figure below.

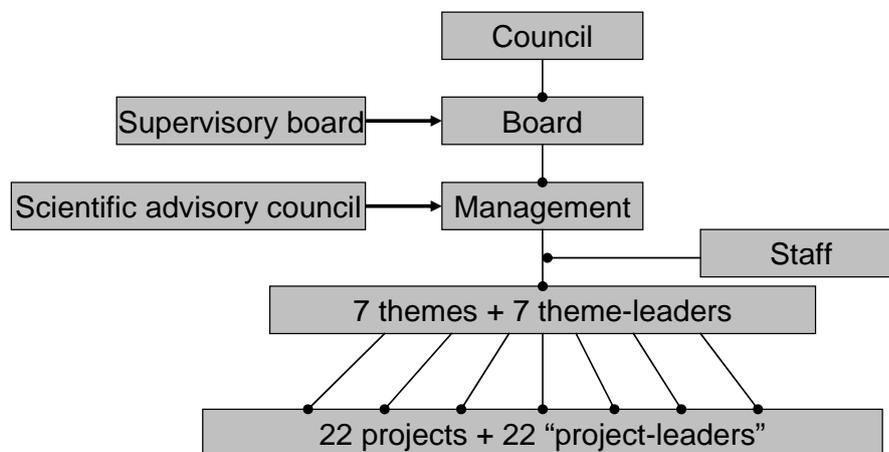


Figure 12. Original organizational structure Transumo

While Transumo initially started off with 22 projects, it initiated several additional projects throughout the years, ending with over 40 projects⁴⁸. Each project in itself was organized in various groups; a board, a 'project-leader' and his management team, facilitative staff, an advisory council, and project participants. Participants included businesses, research institutes, consultancies, (semi-)governmental institutions, interest groups (e.g. trade-organizations), and a few NGOs. The largest share of this group consisted of business actors (on average per project approximately 50%), followed by knowledge organizations (approx. 35%), and semi-governmental actors (approx. 15%)⁴⁹.

4.1.2. My involvement in Transumo

My involvement in Transumo extended from 2005 to 2009, in which I functioned as participant observer, action researcher and 'transition management advisor'. Besides my

⁴⁶ For BSIK-subsidies see *Intermezzo A on Transition Discourse and Sustainable Mobility*.

⁴⁷ <http://www.transumo.nl/Nl/Organisatie/Missie.aspx>

⁴⁸ Depending on what is counted as a project, Transumo's final documents report different numbers

⁴⁹ See *Monitoringsrapport 1* by Bressers et al. 2008 [document nr. 24 appendix III]

own direct involvement, there were several other colleagues at DRIFT, and within the KSI research network, that were active in Transumo. These activities of my colleagues ranged from a monitoring trajectory⁵⁰ to the set up of Transumo's 'Transition program'⁵¹, as well as the organization of a sustainability festival⁵², and several presentations and process facilitations at numerous Transumo events. I was often (directly or indirectly) involved in these activities, and these obviously influenced my own role in, and perspective on, Transumo. This case-study, however, is primarily based on my own (action) research activities in Transumo, as described below.

At the program level I mainly functioned as a 'passive' participant observer at numerous conferences, program meetings and workshops. On some occasions I gave a presentation on transition management, or was asked to write the minutes of a meeting. I clearly remember the very first meeting of Transumo that I attended in 2005. I was the only woman, wearing a pink scarf, which sharply contrasted with the crowd that predominantly consisted of middle-aged men in grey suits. The first person that spoke to me was a professor in public administration, who jokingly asked me 'whether I was coming to spy for my supervisor'. This anecdote illustrates how I often experienced my involvement in Transumo; I was a relative 'outsider'. Not only was I always one of the few, or even only, women present at the meetings, I was not a transport expert, and primarily associated with 'the transition people from DRIFT'. Although I did develop friendly relations with many participants throughout the years, this initial feeling always lingered in the background whenever I participated in general Transumo meetings.

Besides participant observation at program meetings, conferences and workshops, I was also more actively involved as an action researcher and transition management advisor in the following specific projects activities:

- *Fresh Logistics Networks Project (2005-2006)*
- *Logistical Networks (2006-2007)*
- *Rush Hour Avoidance Project (2007)*
- *A15-project (2005 – 2007)*
- *South Wing Project (2005-2009)*
- *Urgenda Vision on Mobility 2050 (2009)*

My first active involvement concerned the *Fresh Logistics Networks* project. This was supposed to be an integrative project in which Transumo would cooperate with two other BSIK-programs: KSI and Transforum (Transumo's counterpart in the agricultural sector). The ambition was to analyze options to make the current logistics of fresh food supply networks more efficient, and to facilitate improved cooperation between relevant stakeholders (i.e. retail companies, transport companies, food suppliers, etc). I was present at several start-up meetings and, together with a DRIFT-colleague, wrote a

⁵⁰ Also referred to as the 'PIZZA-project'

⁵¹ See: <http://www.transumofootprint.nl/Lists/Themadatabase/thema.aspx?ID=13>

⁵² Festival "Midzomern8" organized by BSIK-programs on 21st of June 2007
(<http://www.midzomern8.nl/>)

process advice on how transition management ideas could be used. Despite of the enthusiasm of the initiator, the project was ended before it even really started, due to disagreements between Transumo, Transforum and KSI regarding the set-up of the project (both on substance and division of costs), and a lack of trust that the project would sufficiently contribute to sustainability and system innovation. This being one of the first projects I naively got involved in, I was rather disillusioned by this apparent incapability to make the project work.

The second activity that I was involved in concerned two projects within the thematic cluster *Logistical Networks*: the projects *National Networks* and *European Networks*. My supervisor and I were asked by Transumo to evaluate these projects from a (transition) management perspective, based on several document reviews and interviews with project participants (see specification of interviews and documents in appendices II and III). We wrote an extensive evaluation report that critically demonstrated difficulties in the cooperation amongst participants, the limited attention for sustainability, the lack of a long-term vision, the focus on optimization rather than innovation, and the cynical tone in which many participants spoke about ‘sustainability transitions’. The report also included constructive recommendations for the Transumo program on how to improve these issues, mostly in terms of developing a shared and participatory vision on sustainability mobility. We received explicit compliments for the report by Transumo’s management team⁵³, and one can argue that the report had a certain influence on Transumo regarding the several ‘transition projects’ and ‘vision meetings’ organized later on. However, I also felt that our ‘transition evaluation’ – which was primarily intended as a constructive critique of the Transumo program more generally – was ‘abused’ by Transumo management to criticize these two specific projects and their participants. Soon after the evaluation report, the project *National Networks* was ended, the project *European Networks* was transformed, and both the project-leader and the theme-leader resigned.

In 2007 I participated in a conference on one of Transumo’s most (self-acclaimed) successful projects: the *Rush Hour Avoidance* project. I was asked to give a presentation and ‘trigger debate’ on transition management in two parallel workshops. This particular project will often be referred to in the rest of this chapter.

My most active involvement with Transumo has been the *A15-project* and the *South Wing* project (an external project that was partly commissioned and subsidised by Transumo). Since my involvement in these projects are extensively described and analyzed in a separate case-study (chapter 5) and in Intermezzo B, I do not elaborate on them here. It is however important to mention that these projects provided an important basis for the case-study on Transumo. In both projects I had several encounters with Transumo participants both at the program and project level. In the interviews, participant observations and document reviews conducted in these projects, Transumo was a pivotal element and recurring point of discussion⁵⁴.

⁵³ E-mail from management team [document nr. 42 in appendix III]

⁵⁴ See appendices I, II, III for specification of meetings, interviews & documents reviews used in case-study

My last active involvement was in 2009 and concerned the development of a vision on sustainable mobility. The Urgenda – at that time still part of DRIFT⁵⁵ - was asked to develop a future vision on sustainability for the year 2050, as input for Transumo's final vision report. I participated in Urgenda-meetings with transport experts, and together with my supervisor we used those meetings and our imagination to develop a challenging future image of sustainable mobility. We presented this future image during Transumo's 'vision meeting' in the summer of 2009, together with some other researchers and consultants who had been asked to do the same. A few months later, at the end of 2009, Transumo had its final 'knowledge-festival' where it presented its main results and its vision on sustainable mobility. The final vision on sustainable mobility incorporated several elements of our Urgenda vision. Transumo's vision was published on a new website containing Transumo's 'footprint', i.e. 'legacy'⁵⁶.

4.1.3. Data-collection in Transumo

Methods applied to collect data on Transumo ranged from ethnography, participant observation, action research, interviews and document reviews⁵⁷. All project activities that I was involved with have been used as input for this case-study. All these projects come up in the case-study at some point, with the exception of the *South Wing* project (which is described in the Intermezzo B) and the *A15-project* (which is analyzed as a separate case-study in chapter 5). A detailed list of all meetings, interviews and documents used for this case-study on Transumo is provided in the appendices

The selection of certain projects, thematic clusters and meetings, was based on the opportunity to apply a combination of research methods (as listed previously) that were necessary to observe both internal and external power dynamics, including the different discourses in written documents, open program meetings and internal project meetings. Moreover, the activities were selected in such a way that I could get close enough to conduct participant observation and action research, while safeguarding a critical distance. I consciously aimed to focus on the project-level and on the experiences and perceptions of participants and 'project-leaders', rather than on the internal dynamics within Transumo's top-management. The directors of Transumo were mostly observed 'in action' from a distance, at conferences and in their written publications, and not directly approached for interviews.

Of course there were considerable differences between Transumo-projects. Although I have taken notice of most projects, it was impossible to study all of them into depth, also because one third of the projects were started *after* most of the fieldwork had been done. Moreover, the choice was made to focus on a certain type of meetings and activities in more depth, rather than studying as many as possible, which is inherent to the chosen qualitative and interpretative research approach. With regard to the meetings and activities that were studied, they are quite diverse as they differ in 1) organizational level

⁵⁵ For description of the Urgenda and its relation to DRIFT, see intermezzo A, section A.5.5.

⁵⁶ See: <http://www.transumofootprint.nl>

⁵⁷ For justification of chosen methods see chapter 2

(program, thematic cluster, project), 2) level of (perceived) success, 3) manner and extent to which transition management was applied, and 4) thematic focus (ranging from freight transport to passenger transport and overall transport governance).

Nevertheless, my empirical observations are limited and not representative for Transumo as a whole. This would be a problem if the aim was to evaluate Transumo, but, as stated earlier, this is NOT the aim of this (or any other) case-study. The aim is to learn of my observations within Transumo, regardless of whether or not they are complete. This means that in the following pages, whenever I speak of 'Transumo', one should read '*Transumo as far as observed*'. Moreover, a distinction is made between 'Transumo organization' (board, management team and executive staff), 'Transumo-representatives' (anyone who spoke on behalf of Transumo in external meetings) and 'Transumo-participants' (actors involved in projects). When the word 'Transumo' appears alone, this refers to the *collection of actors participating in Transumo* (including board, management team, theme-leaders and project participants), *as far as observed*.

4.2. TRANSITION AMBITIONS IN TRANSUMO

4.2.1. What is to be transformed: why, how and when?

The Dutch mobility system needed to be transformed because it was believed to suffer from persistent problems and find itself in an unsustainable state, ecologically, economically and socially. This was posed as a threat to the wellbeing of Dutch society and its competitive position. In line with the overall BSIK-philosophy, Transumo strived to face these challenges by transforming the Dutch 'knowledge infrastructure' on mobility, which was believed to be insufficiently 'demand-driven', and insufficiently 'inter- and transdisciplinary', to provide applicable knowledge⁵⁸. On its website, Transumo described its mission as follows:

To accelerate/encourage the transition to sustainable mobility. This will be achieved by initiating, and establishing for the long term, a transition process that leads to the replacement of the current, supply driven, mono-disciplinary technology and knowledge infrastructure, with a demand driven, multidisciplinary and trans-disciplinary, participative knowledge infrastructure.

Transumo's thematic clusters and projects focused on different subsystems of the transport sector, ranging from traffic management to public transport, logistical networks, 'mainport' regions (i.e. Rotterdam sea port and Schiphol airport), financial arrangements and management models. Not only did projects differ in the *subsystems* they focused on, they also differed in terms of the *extent* to which they aimed to 'transform' the respective subsystem. The level of transformative ambition differed for every project, the underlying

⁵⁸ Transumo indicates a 'mismatch' between the 'supply' of mono-disciplinary scientific knowledge and the 'demand' for inter- and transdisciplinary knowledge (Transumo, 2004, document nr.12, appendix III)

idea being that each project, be it ambitious or modest, contributed to the overall transformative ambition of Transumo.

Transumo operationalized its transformative ambition through the development and dissemination of ‘trans- and interdisciplinary’ knowledge, through conferences, meetings, workshops, websites and numerous publications (articles, books, reports, brochures, websites etc.). Transumo had a long-term orientation, which is to a certain extent inherent to ‘knowledge development’. Although the organization itself existed for only 5 years (2005 – 2009), the idea was that the results would, in the long-term, contribute to a new knowledge infrastructure that would be better equipped to deal with future challenges. The tripartite structure was supposed to form coalitions (between researchers, business representatives and government officials) that would come to ‘own’ the developed knowledge and then develop and implement it further, also after Transumo would cease to exist.

4.2.2. Who transforms?

Given the focus on research, Transumo participants were not considered as those who would actually transform the Dutch mobility system. Rather, the overall idea was that Transumo facilitated the development of specific knowledge, which in turn would motivate and facilitate others to deal with the mobility system in a different and better way. At the end of its existence, the organization presented the ‘harvest of 5 years Transumo’ and directed this at “anyone who also wants to start projects in the field of sustainable mobility: mobility managers at companies, policy officials at governmental departments and consultants”⁵⁹.

The tripartite basis demanded that each project involved participants from the knowledge sector, business and government. There was a high participation of consultants in transport engineering and process management, often representing ‘hybrid’ organizations that move between business, research and government. Most projects involved at least one powerful business stakeholder (ranging from the Rotterdam Port Authority to insurance companies and banks), and at least one government representative (varying from local authorities to policy programs and ministerial departments). Despite of this business and government involvement, there clearly was a leading role for the research sector. Many of the board-members, theme-leaders and project-leaders were transport experts with a professional record in science and/or consultancy. The disciplinary background of researchers ranged across the engineering and social sciences, with a focus on transport, economics, process management, business and public administration. The NGO-sector was poorly represented, although some projects involved representatives from semi-governmental organizations and some new projects involved an environmental NGO. The (direct) participation of citizens was absent; they were mostly seen as a part of the system that needs to *be* transformed (i.e. travellers who’s behavioural change needs

⁵⁹ Transumo (2009) [document nr. 19 in Appendix III]

to be facilitated), rather than as actors that transform or develop transformative knowledge themselves⁶⁰. I come back to this issue in section 4.5.

4.2.3. What's new?

Transumo emphasized the importance of going beyond the technological and physical aspects of transport, by including issues such as governmental complexity, self-organization, finance and so on. It was not (only) about developing new mobility concepts, but also about figuring out better ways in which these concepts can be implemented in social reality (organized, financed, managed etc.). Insights in the field of traffic management and transport engineering were combined with social scientific insights on behaviour, finance, management and governance. These 'social insights' were to enable new technological and infrastructural developments, e.g. new management models and public-private arrangements that facilitate the market introduction of a new technological product. Although many of these 'social science insights' may not seem 'new' to social scientists, they were presented as being new and relevant to Transumo's target group. The newness in Transumo lied not so much in individual concepts or individual actors, but rather in new *combinations* of concepts and the application thereof by new *coalitions* of actors.

Transumo's most successful 'show-case' in this regard concerned the notorious *Rush Hour Avoidance* project. Starting off with the basic idea that 'rewarding' travellers for desirable behaviour is more effective than 'punishing' them for undesirable behaviour, the project went on to do a local pilot experiment, in which car-drivers were paid *not* to drive during morning rush hours, and in which it was studied to what extent car-drivers subsequently adapted their travel behaviour. Despite of initial scepticism and political controversy, the experiment became widely celebrated as a success, and was repeated on several locations. Although the basic idea for the project ('rewarding') was initiated elsewhere⁶¹, Transumo enabled the further development of the concept in a tripartite setting, involving a bank, a local government department, a ministerial innovation program, and several researchers.

Other examples of this 'rewarding' concept concerned the project *Insuring Kilometres*, in which insurance companies explored the financial benefits of rewarding certain target groups for responsible driving behaviour. Or the *Mobility Scan*, which provides an online overview of how mobility managers of several organizations (government or business) can 'reward' their employers for desirable travel behaviour, be it in choice of transport mode, travel hours or parking habits. The idea of 'rewarding instead of punishing' became one of the major themes running through Transumo. Several thematic clusters and projects referred to this philosophy of 'seducing & rewarding'. Given technological facilitation through ICT applications, which were explored in several of Transumo's traffic management projects, the possibilities of 'seducing & rewarding' seemed endless. By

⁶⁰ The *Rush Hour Avoidance* project did involve citizens in its pilot experiments. However, these citizens functioned mostly as guinea pigs, not as designers or owners of the project

⁶¹ Interview nr. 58 (see appendix II)

demonstrating these possibilities, Transumo constructed a new ‘pricing policy paradigm’ for mobility, in which *positive* financial stimuli were key to enable the government to induce desirable (i.e. ‘sustainable’) travel behaviour, through a self-organizing market system that supposedly would safeguard individual ‘freedom of choice’. This issue will be critically discussed in the power analysis.

4.2.4. (How) is Sustainability dealt with?

Formally, ‘sustainable mobility’ was an explicit orientation from the beginning. However, as expressed by Transumo representatives on numerous occasions, they struggled with the concept of sustainability and doubted its usability. Through out the five years, however, the theme of ‘sustainable mobility’ seemed to receive increasing attention from the Transumo organization in meetings and reports⁶². At the final ‘Knowledge Festival’ and in their ‘Final Harvest’ publications, Transumo presented its ‘vision on sustainable mobility’, something that had been lacking during the previous five years. In this document it is stated that Transumo’s *future vision* on mobility “can be called ‘sustainable’ in the sense that”:

- compared to the situation now there is a very significant decrease in (net) CO₂ emissions, other polluting emissions are dramatically reduced, noise from traffic and transport is reduced and the compartmentalization / barrier effect has not increased any further (‘planet’),
- the public transport system (in combination with the use of space) provides for the efficient, reliable and affordable accommodation of the need for mobility whereby the transport system is accessible to everyone (no social exclusion) – (‘people’)
- the goods transport system is organized in such a way that the necessary transport of goods can be undertaken efficiently, reliably and affordably (‘people’);
- the accessibility of economically important concentrations of activities (cities, main ports, industrial centres, logistical centres) for passenger and goods transport are handled efficiently (‘prosperity /profit’);
- the goods flows related to international trade and logistical processes (including main ports – hinterland) are efficiently handled (‘prosperity / profit’), and
- the (strategic) dependence on non-renewable fuels is substantially reduced⁶³.

Although this overarching vision document was only presented at the end, the triple P philosophy has been clearly present in all of Transumo’s activities from the beginning. Project-leaders were asked to indicate how they contributed to ‘sustainable mobility’ by specifying how their project activities benefited ‘people, planet and profit’. A result thereof was that any project could be framed as somehow ‘contributing to sustainable mobility’, as any form of ‘improvement’ can be argued to benefit the three P’s in one way or another. Even if the main objective was economic optimization, the ‘side-effects’ thereof could be listed as indirectly beneficial for planet and people. In the ‘annual

⁶² At the Transumo conference in 2007 the chair of the Transumo board stated that “sustainability had always been in the word but that it was now an absolute necessity” (referring to political attention for sustainability) [Fieldnotes, meeting nr. 76, appendix I].

⁶³ Transumo Vision 2009, p. 3 [document nr.21, appendix III]

reports' of the *Logistical Networks* projects⁶⁴, for instance, it was mostly emphasized how 'increasing efficiency' and 'combining freight loads' led to cost reduction and speeding up traffic flows and how this was 'good for profit'. It was then also mentioned how this led to 'less transport' (in terms of less kilometres), and therefore also 'less noise' (i.e. good for 'people') and 'less emissions' (i.e. good for 'planet'). In this way the primary goal of economic optimization was framed in terms of 'sustainability'⁶⁵.

The challenges of the triple P approach were explicitly and frequently discussed at Transumo meetings. It was stated that even though plenty attention was given to 'profit' and 'people', too little attention was paid to the 'planet' aspect of sustainability. Subsequently, researchers were hired to deal with environmental aspects, which – amongst other things – resulted in a report on the 'Planet-aspect of Transumo'⁶⁶, and meetings were held to discuss environmental transport challenges, including the problem of 'rebound effects' (i.e. improving the transport system leads to more transport) and policy instruments to deal with all this (e.g. emission trading systems). So even though sustainable mobility was not always as explicitly dealt with in each and every individual project, at the program level it continuously received consideration. The 'strategic knowledge agenda' that Transumo leaves behind⁶⁷, formulates more than 70 research questions on sustainable mobility, at a general level as well as at the level of its different thematic clusters. This extensive 'knowledge agenda' indicates how Transumo presented itself; not in terms of providing final answers to what sustainable mobility is or how it can be achieved, but rather as setting an agenda for future transport research, in which the concept of 'sustainable mobility' is unpacked and specified in several sub-themes.

However, Transumo did more than placing sustainability on the scientific research agenda. In numerous presentations, the scientific director of Transumo – a leading scholar in the field of supply chain management – always discussed sustainable mobility by adding a 'fourth P' of 'Pleasure', passionately arguing that integrating sustainability in our logistical management is not only necessary, possible and beneficial for businesses, but that it is also 'fun'. Clumsy as this may sound to some, the need to make the sustainability concept more 'sexy' is emphasized by many, and Transumo-representatives made a conscious effort to do so in the context of the transport sector.

One could also see this in the integration of the sustainability concept in the 'traffic management discourse', most clearly illustrated by the project '*Transition to Sustainable Traffic Management*' (*TRADUVEM*). In a sector that has been trained in technological optimisation for the sake of economic efficiency ('profit') and safety ('people'), the inclusion of environmental aspects and the use of traffic management systems to spare the 'planet', is quite a challenge. The *PROTECT* project (on container surveillance systems) was primarily aimed at improving the efficiency of security scans. But during one of

⁶⁴ See documents nr. 14, 15, and 16 [appendix III]

⁶⁵ Participants acknowledged and confirmed this point, underlining that increasing efficiency and (thereby) creating profit was the primary aim of their project [interviews 22-27, appendix II]

⁶⁶ Transumo, 2008 [document nr. 18, appendix III]

⁶⁷ Transumo, 2009 [document nr. 20, appendix III]

Transumo's several meetings, a representative of the project indicated that even though they did not explicitly contribute to the 'planet' aspect in terms of reducing emissions, the surveillance systems could be used to scan containers in terms of their general level of 'health' (i.e. toxic waste and other hazardous materials), which would benefit both people and planet.

A critical observer could explain this as 'reframing' of a project geared at economic efficiency in sustainability terms. In a more positive interpretation however, it can also be argued that this explores how profitable technologies can also be used for other ends besides cost-efficiency. So even though one can argue that the triple P approach resulted in a shallow 'unpacking' of sustainability, it can also be argued that this 'seduces' existing projects to make a genuine effort to reconsider their ongoing activities in 'sustainability' terms.

4.2.5. (How) was transition management applied?

Similarly to the sustainability concept, Transumo participants struggled with the concept of 'transition management', and many had mixed feelings about it. At a program meeting, the chair of Transumo's board of directors stated that he was sceptical about the 'famous word transition management' and wondered whether it was 'the Emperor's new clothes', but that, on the other hand, it provided 'inspiration', 'a theoretical basis', and 'tools' on how to deal with the 'very complex environment' of mobility governance.⁶⁸ Similar 'mixed' comments were made by executive program directors, theme-leaders, project-leaders and participants. One of the executive directors stated that Transumo wanted to use (only) *some* elements of the transition management approach and apply a 'light version' of transition management.⁶⁹ At the end of its existence, Transumo presented itself as a program that had 'experimented' with transition management⁷⁰ and provided a 'practical translation' of it:

the goal of Transumo is to develop knowledge about transitions in practice. We have seen that theoretical approaches are an adequate basis for practical experiments, but that practical approaches and instruments were lacking. In the project 'Transition program' Transumo has itself produced the necessary tools.⁷¹ [translated from Dutch by F.A.]

Overall, the transition management approach was most present in Transumo in terms of 'evaluating, learning and monitoring' (one of the four cornerstones of the TM-cycle). Not only in the 'transition monitoring' project, but also in the overall 'reflexive spirit' of reflecting, searching, learning, and adapting ongoing activities. This was not only observed in the way Transumo presented itself during meetings but also in the many additional trajectories that were initiated 'on the way'. During its lifetime, Transumo initiated

⁶⁸ Fieldnotes [meeting nr. 44, appendix I]

⁶⁹ Fieldnotes [meetings nr. 34 and 137, appendix I]

⁷⁰ Transumo 2009 [document nr. 19, appendix I]

⁷¹ Transumo 2009 [document nr. 22, appendix I]

numerous activities in the name of transition management; extra funds were made available to ‘transition’ ongoing projects, and several researchers and advisors were involved to organize meetings and workshops on transition management, to set up the project called ‘Transition program’, and to evaluate or monitor both the program and the projects from ‘a transition perspective’.

The other three cornerstones of the TM-cycle were only partially present. Although ‘problem structuring and organizing a multi-actor network’ did occur, in the sense that Transumo started with a problem statement and set up a tripartite structure to deal with it, the way in which this was done starkly contradicts with some fundamental principles of transition management. Most obvious in this regard are: the formal hierarchical structure with supervisory boards, advisory committees, management teams, and so on, (rather than an informal and personal set up), the primary involvement of ‘usual suspects’ and ‘regime-players’ from within the transport sector (rather than niche-players and outsiders) and the conventional problem statement set up beforehand (rather than a participative system analysis and shared problem structuring). As far as ‘transition arenas’ were set up, this was mostly a matter of ‘adding’ new participants to existing projects..

With regard to ‘developing sustainability visions and joint strategies’, Transumo presented its vision on sustainable mobility at the end of the program (November 2009), based on several earlier ‘envisioning activities’⁷². One of these ‘earlier activities’ concerned the commissioned report called *The Planet Aspect of Sustainable Mobility: Top-down Vision-forming for Transumo* (presented in January 2008) which, as the title already suggests, only dealt with one aspect of sustainable mobility (i.e. environment), and was inserted top-down (i.e. by hiring an external consultant to write the report). Although Transumo’s final vision document integrated more aspects of sustainable mobility and included the input of ‘bottom-up envisioning activities’, it did so *retrospectively*. This means that, on the one hand the vision was ‘adapted’ to experiences at the operational level, but on the other hand, it did not function as a ‘living vision’ that inspired operational activities *before* and *during* the process. Moreover, even though Transumo’s final vision integrated several

⁷² This is how Transumo describes the background of its Vision Document: “Around 2003 and 2006, while Transumo was running, moves were made towards ‘visions of sustainable mobility’. The most important objectives were to find suitable subjects for the Transumo program (2003), place them in a framework of running projects and reorganize the project portfolio (2006). These visions contained important insights, but nevertheless proved to offer an incomplete framework: they were far too Transumo-oriented and encompassed too few of the latest insights into climate challenges. The visions also failed to provide adequate guidelines for the formulation of a ‘national’ knowledge agenda. The process of formulating the Transumo vision was consequently started in 2008. Part of it is the ‘vision capturing’ pathway in which AT Osborne collected ideas about sustainable mobility from important players in the mobility and transport world. Actors Process Management/DRIFT (Dutch Research Institute For Transitions) also organized a number of workshops with Transumo theme leaders, people involved with Transumo and visitors to Transumo events, and also, in collaboration with AT Osborne, with staff from the Ministry of Transport and Public Works. Partial visions had already been developed for the Transumo themes and for many projects these provided an important source of ideas”. Transumo 2009, p.5 [document nr. 21, appendix III]

aspects of sustainable mobility, it did not explore *multiple images* of sustainable mobility, nor did it explore different possible ‘transition paths’. As Transumo itself states:

the ‘Transumo Vision’ endeavors to paint a *consistent picture* — worked out from the present — *of one possible future situation of sustainable mobility in a specific social, spatial, economic context and one possible transition path towards it*⁷³.

This contrasts with the objective of transition management that actors be inspired by *multiple* images of sustainability, explore *different transition paths* through operational experiments, and *on that basis* adapt their chosen direction and strategies. This leads us to the final ‘corner stone’ of the TM-cycle, namely ‘mobilizing actors and executing projects and experiments’. Obviously, Transumo mobilized many actors and executed numerous projects. What distinguished this process from the transition management approach to set-up ‘transition experiments’, is that most Transumo projects were solution-oriented, starting with a *given* problem and a *given* solution, rather than starting by *questioning* what the problems and solutions were in the context of multiple sustainability visions and possible transition paths⁷⁴.

Even though Transumo’s approach may have differed from the prescriptive TM-cycle in numerous aspects, it did make a rather elaborate effort to apply transition management in the form of ‘transitioning’. As discussed in chapter 3, transition management can also be used to “build on existing projects and experiments to *transition* these and by broadening and scaling-up and (re)defining visions” (Loorbach 2007:291-292: emphasis added). Transumo did so in several projects and, in fact, the very concept of transitioning and subsequent ‘transitioning instruments’ were for a great part developed and researched on the basis of Transumo activities⁷⁵. When Transumo stated that it has ‘experimented with transition management’ and ‘translated it to practical tools’, this mostly refers to ‘*transitioning* management’. If transitioning is part of transition management (an issue to be explicitly discussed in chapter 8), then Transumo did not only ‘apply’ transition management, but actually played a significant role in *developing* it. This is in itself in line with the reflexivity principle of transition management; an approach that aims to adapt, develop and renew itself, based on co-production between research and practice (Kemp & Rotmans 2009).

4.3. POWER IN TRANSUMO

4.3.1. Which resources are mobilized?

Transumo mostly mobilized mental, human, and monetary resources to achieve its goals. Artifactual resources were primarily developed at the *conceptual* level (e.g. ‘intelligent

⁷³ Transumo Vision 2009, p.6 [document nr. 21, appendix III]

⁷⁴ For a more detailed and in-depth differentiation between classical innovation projects and transition experiments and the empirical analysis thereof within Transumo, see Kemp & Van der Bosch (2006), Van der Bosch & Rotmans (2008) and Van der Bosch (2010).

⁷⁵ See: Gorris, T. and Van den Bosch 2011 en Van der Bosch 2010

vehicles' or a 'container surveillance system'), although there was also 'physical realisation' of resources in the form of computer models and interactive websites⁷⁶. Essentially Transumo provided subsidies to encourage people to develop concepts that *indirectly* enabled (other) people to materialise, commercialise, produce, and distribute resources in the most efficient way. In terms of Mann's typology of power (see chapter 4), Transumo primarily had *economic* and *ideological* power, which it primarily used to influence Dutch 'mobility professionals'.

Interestingly, the tripartite 'co-financing' structure, as regulated by BSIK, required that if Transumo provided an x amount of money to a coalition to conduct a project, this coalition was required to also invest the same amount of money in the project. In theory, this meant that Transumo's mobilization of money, by definition, led to *more* mobilization of money. However, in practice, many organizations used Transumo's funding to co-finance projects that they already intended to invest in beforehand. In this regard, the mobilizing strengths of Transumo's financial investments were questionable.

With regard to Transumo's ideological power, at first sight it seems that the 'mental resources' that were mobilized mostly contained 'dry' information and concepts (inherent to its orientation towards transport science), more than ideals or beliefs. After a closer look however, we saw that Transumo spread several 'normative' ideas and beliefs throughout the transport sector. We come back to this in the next section.

4.3.2. Which types of power are exercised?

Transumo exercised (mental) *innovative power*, in the sense that its participants developed *new* concepts and ideas on mobility. Many of these new concepts and ideas in turn could be used (by others) to exercise innovative power by materialising new artifactual resources. Transumo participants also invented and created new technologies such as the *People Mover*, other intelligent vehicles and electric cars, surveillance and monitoring systems. Some new technological products were also materialised and marketed by Transumo, such as computer models, visualizations, interactive website applications, etc. In a way, Transumo also created 'new *human* resources', in the sense that it 'bred' new kinds of professional beings; the mobility (transition) manager, the interdisciplinary transport expert, the transdisciplinary academic, and so on.

Transformative power was exercised in the sense that Transumo quite explicitly created a new trans- and interdisciplinary knowledge network (i.e. a new structure). Moreover, by linking new concepts and technologies to new financial, management, and governmental structures it enabled the distribution of these new resources in the transport sector. It also (helped to) create new institutions by developing and spreading new mobility paradigms (e.g. 'seducing & rewarding' pricing policies, ideas of self-steering and private responsibility, 'sustainable efficiency', closed production cycles, etc).

⁷⁶ See Transumo products at www.transumofootprint.nl

Reinforcive power was exercised most clearly in the enactment of subsidy regulations, through which Transumo (willingly or unwillingly) reproduced bureaucratic governmental structures. The organizational structure of Transumo itself, with all its boards, committees and management teams, reproduced our prevailing hierarchical culture. Transumo also exercised reinforcive power, in the sense of reinforcing the institutions of ‘science’ and ‘consultancy’. Even though it aimed to change the way in which science was done (to be more trans- and interdisciplinary), it still strengthened the position of *existing* scientific institutions, research departments, and consultancies within the transport sector. Even though several new concepts and technologies were invented, this network of scientists and consultants also provided a platform to continue the distribution of ‘old’, existing concepts and technologies throughout the transport sector. Moreover, reinforcive power was exercised in terms of reproducing existing transport paradigms. Even though some new paradigmatic ideas were launched (as discussed earlier), many ‘old paradigms’ were reinforced and reproduced. Examples were individualisation, ‘freedom of choice’, efficiency and safety norms, market principles, and a technocratic approach towards mobility.

4.3.3. What are the power dynamics?

The power dynamics between Transumo, the transport sector, and the government, were primarily *synergetic*. That is, the power exercised by Transumo was primarily used to *enforce and enable* the power exercised by government and business actors in the transport sector. Transumo explicitly strived for such synergetic power dynamics. We can see this in its basic mission statement, in which the ambition to set up a new knowledge infrastructure is presented; “advances that *help to strengthen the competitiveness of the Dutch transport sector* (‘Profit’) and to preserve and improve spatial, and ecological (‘Planet’), and social (‘People’) aspects of mobility”⁷⁷. Transumo’s vision on sustainable mobility spoke of a public sector “that has a greater say” and becomes “more decisive” while maintaining an “equal partnership” with the private sector; a “central government [that] encourages sustainable mobility through fiscal measures and employs strict regulations”, and a Schiphol airport and Rotterdam seaport that are “centres for the economy with a strong emphasis on their ‘controlling role’ in global logistics and transport chains”⁷⁸.

The most obvious way in which Transumo enabled and enforced the power exercised by current public and private actors, was through its own exercise of reinforcive power: the reproduction and enforcement of bureaucratic and hierarchical structures, existing scientific institutions and consultancies, and existing mobility paradigms. By doing so, it provided a hierarchically structured and bureaucratically managed network of ‘transport experts’ that willingly provided the necessary ‘transport expertise’ (on technology, finance and management) to government and business, and helped to uphold some of their most fundamental underlying paradigms (e.g. mainports as central in the prosperity of Dutch society, efficiency, privatization, market principles, etc.)

⁷⁷ <http://www.transumo.nl/Nl/Organisatie/Missie.aspx>, emphasis added

⁷⁸ Transumo Vision 2009, pp. 9, 10, 13, 14 [document nr. 21, appendix III]

However, also the *innovative* and *transformative* exercises of power by Transumo, (developing new concepts and technologies and linking these to new structures and new mobility paradigms), ultimately enabled and enforced the exercises of power by others in the transport sector. Let us take the example of Transumo's concept of 'seducing & rewarding'. The *Rush Hour Avoidance* project was one of Transumo's most successful and widely celebrated creations⁷⁹. One of the most important elements of this success was that several governmental departments and companies showed interest in applying it. During Transumo's final 'knowledge festival', the minister of transport was present through a videoconference, in which he stated that the government would definitely pick up "matters like *Rush Hour Avoidance*"⁸⁰. Meanwhile, on the podium a forum discussion was started, involving amongst others a representative of the Rabobank, one of the main participants in the *Rush Hour Avoidance* project, and chair of Transumo's business council. This scene unfolding on the stage of Transumo's final conference, can be placed in a broader societal setting; ongoing political controversy over 'road pricing' policies, a 1 billion Euro concession 'hanging over the market', and subsequent commercial competition, between various business actors, on who got to exploit the technological, financial and organizational management of these road pricing policies.

Essentially, it seemed that the innovative and transformative ideas of Transumo were 'picked up' by government and business when it was 'convenient' for them to strengthen their own position and to settle their ongoing political and commercial power struggles. Transumo encouraged this to happen, as the very tripartite structure was based on the principle of 'demand-driven' research. The question is what *kind* of power exercise Transumo facilitated in this way. One can argue that Transumo's output enabled government and business to exercise *transformative power* in the transport sector, in the form of creating new financial structures and new public-private arrangements. On the other hand, it can be argued that this ultimately enforced the reproduction of existing institutions and paradigms. Although the idea of 'seducing & rewarding', instead of 'punishing', could be constructed as innovative or even as a 'paradigm shift', it did fit in with a prevailing neo-liberal trend involving new public management, privatization, and environmental policies based on market principles, such as emission trading, the overall idea that 'everything has a price', and that 'people should pay for the consequences of their behaviour'.

Regardless of what kind of power is ultimately enabled by these synergetic power dynamics, it can be stated that there was a low level of *antagonistic* power dynamics; Transumo did little to *disrupt or resist* the exercise of power by others in the transport sector. Even though participants did criticize the government during meetings and informal discussion, and even though Transumo presented itself as an independent research- and innovation program that constructively criticized government policy, there was little explicit political activism in terms of instigating societal debates on mobility controversies, or critical media expressions on government or business actions.

⁷⁹ At the Final Knowledgefestival, the *Rush Hour Avoidance* project was explicitly mentioned as one of Transumo's "pearls" and most successful projects [fieldnotes, meeting nr. 141, appendix I]

⁸⁰ Fieldnotes Transumo Knowledge festival [meeting nr. 141, appendix I]

4.3.4. Which power relations can be distinguished?

As discussed in the previous section, Transumo primarily had a *synergetic power relation* with the major actors in the transport sector. It had a *different* kind of power ('mental innovative power' and the mobilization of expertise), compared to government and business, but this was exercised in such a way that it enabled and enforced the power exercised by those actors. However, we also observed other type of power relations, between Transumo and other (similar) organizations, and within Transumo internally.

In terms of power *over* (i.e. dependence relations), Transumo was clearly *more* dependent on government and business actors than the other way around. There was of course a certain level of 'mutual dependence', as the whole BSIK-structure was based on the philosophy that the future of Dutch society depended on a new knowledge infrastructure, something which Transumo (helped to) develop. Nevertheless, the existence of Transumo as an organization entirely depended on government subsidies and business investments, and even though Transumo representatives claimed that it was never the intention to establish Transumo as an institution, serious attempts were made to continue the program (in an adapted form), which failed due to the unwillingness of government to provide the necessary subsidy⁸¹.

It is hard to say whether Transumo exercised 'more' or 'less' power than other, similar network-organizations. The more relevant question is whether and to what extent Transumo cooperated, co-existed, or competed with these other organizations. Here one can make a distinction between similar organizations in other sectors (i.e. other BSIK-programs) and similar organizations within the transport sector⁸². I start with the latter. One can speak of a 'competitive', or at least un-cooperative, relation between Transumo and its most similar counterpart in the transport sector: *Connekt*. Similarly to Transumo, Connekt was a network-organization that aimed to 'connect' public and private actors in the Dutch transport sector. Initially, Transumo started off as an innovation program 'under' the Connekt-umbrella; it shared its secretarial staff and was stationed in the same building. It did not take long before Transumo's people clashed with Connekt's people, and the Transumo program moved on to share a building with another BSIK-program (Transforum). The exact details of this clash are unknown to me, but indicative are the way in which a person working at Connekt described Transumo, namely as a "hobby of professors"⁸³. While Connekt was primarily based on facilitating partnerships between its public and private members, with a general aim of improving the transport sector, Transumo had a strong orientation towards academia and 'sustainable' mobility.

Many of the 'hybrid' organizations mentioned previously, i.e. consultancies that move between research, business, and government, continued to be involved in both Transumo and Connekt projects⁸⁴. As such, it can be argued that during the existence of Transumo

⁸¹ Fieldnotes [meeting nr. 141, appendix I]

⁸² For instance: Connekt, KPVV, TNO, and other research and consultancy networks in transport.

⁸³ Fieldnotes [informal conversation at several meetings at Connekt]

⁸⁴ Examples are TNO and Buck consultancy

there was a relation of ‘co-existence’; the two organizations did not cooperate, but also did not ‘stand in each other’s way’. However, competition still sets in at the end; if government and business actors find the ‘Connekt-approach’ to be more successful and useful (for their own purposes) than the ‘Transumo-approach’, this may have played an important role in the decision not to subsidise the continuation of the Transumo program.

Moving on to Transumo’s relation with similar organizations in other sectors (i.e. BSIK-programs), this was primarily a relation of co-existence and, to a certain degree, cooperation. Besides cooperation in specific projects, representatives and participants of these different programs would meet each other during several networking conferences of ‘the transition network, during which they presented and discussed their experiences and challenges, (mostly in relation to transition management). As elaborately described in *Intermezzo A on Transition Discourse and Sustainable Mobility*, this cooperation between BSIK-programs within ‘the transition network’ was limited, although one could hypothesize that it had several spin-offs (such as the *Urgenda*, for instance).

Despite of the overall intention to cooperate, attempts to conduct common projects did not always succeed. For instance, the failed start-up of the *Fresh Logistic Networks* project, (as described in section 4.1.2.), was mostly initiated because BSIK’s supervisory ‘Committee of Wise Men’ had decided that it be desirable for Transumo, Transforum, and KSI to cooperate and conduct at least one common project in the name of ‘Sustainable System Innovations’. Besides the individuals who were supposed to lead the project, nobody seemed to regret not getting on with the project⁸⁵. Despite of some level of cooperation, the relation between the different programs was primarily one of sector-fragmented *co-existence*.

With regard to Transumo’s internal power relations, there seemed to be an overall situation of *mutual dependence*. Although the Transumo organization decided whether projects were eligible, and could end the funding of projects, on the basis of mid-term evaluations, project-leaders and participants could also end their involvement and investment in projects, both of which situations occurred. Mutual dependence was partly facilitated by the tripartite structure of co-financing, which required investment (both time and money) of all participants. In theory, this tripartite set-up also led to *mutual dependence* between business, government, and research participants within projects, as they all needed each other to make the project work. However, in practice it was observed that, in the observed projects, researchers seemed to be more dependent on business actors than the other way around, in the sense that they had more need for co-financing than business actors did, and that for them there was far more at stake regarding the success and continuation of the project, (in terms of reputation and career).

Similar observations can be made regarding the ‘interdisciplinary’ relations within Transumo. In theory, social sciences, economics and engineering were all required to gain insights in the challenges of sustainable mobility. Nevertheless, I observed a clear

⁸⁵ Fieldnotes [informal conversations with several individuals involved in Fresh Logistics Networks]

dominance of transport economists, management and logistics experts, in meetings (both at the program and project level), in publications, and in the overall discourse of Transumo. This was also reflected in the constellation of Transumo's board and management team, and in the strong presence of certain research departments (e.g. transport departments of the Erasmus University or Rotterdam, the Technical University of Delft, and TNO). Although there was also an explicit involvement of professors and researchers in the field of governance and 'transition management', this was mostly confined to one of the seven thematic clusters, i.e. the thematic cluster on 'governance'. Outside of that specific thematic cluster, the role of governance researchers was more to provide *process* advice to Transumo, rather than engaging in the *substance* of what sustainable mobility is or should be. I return to the strong differentiation between 'process' and 'substance' in more detail, in the case-study of the A15-project.

Regarding power relations between different generations and genders, one can be short. Although there were numerous 'young' researchers and consultants involved in Transumo-projects, the older generations (40+) dominated in hierarchical terms. Women were underrepresented, not only in the board and management team, but also within projects. As described in section 4.1.2., there was more than one occasion in which I was one of few women, or even the only female at a Transumo meeting. Of course, these power relations were not only specific for Transumo. Rather, the relations within Transumo reflected existing power relations at higher levels, whether it be the transport sector, Dutch society, or human societies in general. The point is that Transumo reinforced and reproduced such existing power relations.

4.4. EMPOWERMENT IN TRANSUMO

4.4.1. *How and to what extent are the conditions of power met?*

Within Transumo, the *access to resources* was fairly good. Both the organization and the participants had access to money, information, and different type of experts. Of course, the extent to which this access to resources qualified as 'sufficient' is a relative issue, but the basic condition was there. However, the *strategies* that were used *within* Transumo were limited; mostly the dissemination of knowledge through conferences, articles, reports, websites, computer models, and brochures. The strategies for mobilizing resources were primarily academic. Even though in some projects there were also business oriented strategies (e.g. financial models and management tools), little use was made of more political strategies, e.g. lobbying, activism, media, or political debate..

The same can be said about *skills*. Of course, skills differed for each project and individual, but a few general observations can be made. The most well-represented skills concerned *expertise* and the ability to process information through research skills, modelling techniques, writing articles and reports. Related to that, presentation and communication styles were mostly dry and formal, albeit mixed with a fair amount of humour. Presentations given at program and project-meetings were not particularly passionate or inspirational, although there were a few exceptional eloquent speakers. This is of course subjective matter; to certain outside observers, the majority of given presentations may

have seemed 'dry', but it can be argued that in the transport sector this was an advantage, because 'down-to-earth' communication of substance-oriented expertise is valued over fancy or creative presentation styles. On the other hand, it can be argued that a program that aims to 'translate' scientific expertise to practice, and to 'seduce' practitioners to use such expertise for 'sustainable mobility', necessitated a more varied palette of communication styles and presentation skills.

With regard to *willingness*, there seemed to be an overall willingness to make the program and projects work and to 'improve' the Dutch transport sector, but the willingness to explicitly contribute to 'a transition to sustainable mobility' seemed relatively low. Although there was a fair amount of enthusiasm and (academic) curiosity regarding transport innovations, the attitude towards transition and sustainability concepts was often a cynical and sceptical one. I come back to this in the next section on intrinsic motivation.

It is not surprising that the conditions of power, i.e. strategies, skills, and willingness, were limited. After all, Transumo was based on the idea that certain conditions of power were lacking in the transport sector, and that it was necessary to create these conditions; improve the *access* to resources (mostly knowledge and technology), develop *strategies* on how to mobilize them, learning new *skills*, and creating *willingness* to contribute to a sustainable mobility system. In a way Transumo aimed to 'empower' individuals to make the Dutch transport sector a more sustainable one. The next sections analyze this issue of empowerment in more detail, starting with the level of intrinsic motivation.

4.4.2. What is the level of intrinsic motivation?

As discussed earlier, most Transumo participants were rather modest regarding their *own* impact. This low *sense of impact* can be explained in three ways. First, there was the idea that Transumo was supposed to develop knowledge that *others* could use to impact the transport sector. However, the majority of participants felt that the outreach of Transumo was limited and that the target group was unclear⁸⁶. Second, there was a general feeling that transport, especially freight transport, was not seen as a 'sexy topic' by the rest of society, that it was undervalued and that it did not receive the political priority it deserved. Third, it was often emphasized that the transport sector was not a thing in itself, that it was derived from other sectors, and that the direction of the transport sector was determined by 'greater forces' such as globalisation and energy trends. As such, the impact that Transumo participants or the transport sector overall could have on a 'sustainable society', was considered to be limited.

Interestingly, Transumo's transition discourse did not seem to improve this sense of impact. Transition concepts tended to illustrate how complicated and interconnected the transportation system is, how persistent unsustainability problems were, how much need there was for radical system innovations, and how long it would take before this could

⁸⁶ Monitoring report I [document nr. 24, appendix III]

happen. As most projects were geared at concrete improvements of only one specific subsystem of 'the mobility system', the confrontation with the ambitious transition discourse seemed to lower many participant's sense of impact; instead of making them feel that they were making a difference with their project, it suggested the opposite. Not only did the transition discourse have this effect on participant's sense of *impact*, it also affected their sense of *meaning, competence* and *choice*.

As mentioned earlier, the Transumo organization provided a 'format' in which project proposals and reports had to be delivered⁸⁷, in which project-leaders were required to report whether and how their project 'contributed to the transition to sustainable mobility', and how transition management was applied. Some project-leaders noted that they had to 'translate' their project proceedings in to 'transition terminology', and that they found this difficult. In the Logistical Network projects, most participants seemed to equate the words 'sustainability', 'transition', and 'transition management' to a general and vague idea of change, improvement, and collaboration. One participant stated that these terms were never used during project meetings, and that he had no idea what transition was supposed to mean. Others literally emphasized that these terms were 'meaningless' and just a matter of 'window-dressing'. The notion of 'system innovation' was equated to innovation in general, and 'innovation' was used to imply technological optimization⁸⁸.

As such, it seems that in many projects transition terminology was used out of *extrinsic motivation*, rather than intrinsic motivation. Project documents were written and translated in transition terminology because this was 'expected' and formally 'required' by Transumo, not because the authors mastered or cared about the meaning of these concepts. While transition concepts are in theory suitable to create a sense of 'meaning', they hardly seemed to do this in the case of the Transumo projects under study. As discussed earlier, Transumo struggled with its predefined mission of contributing to 'a transition to sustainable mobility', and only presented its vision right at the end of its existence. In the mean while, most participants (including many transporting experts and practical businessmen), found the transition terminology particularly difficult to understand (theoretical, abstract, overly ideological, etc.), and it did not provide them with a higher sense of meaning about what they were doing.

Although many participants had a positive *sense of competence*, in terms of their abilities to provide transport expertise (presented in articles and at conferences and meetings), the tripartite set-up confronted them with several competences they lacked or at least needed improvement, especially regarding the ability to convince and involve both business and government actors. On top of that, the ambitious transition terminology made participants dependent on 'experts' that could 'explain' the transition terminology

⁸⁷ Reporting Format Transumo [document nr. 13, appendix III]

⁸⁸ Interviews [22–27, appendix I] Although these interviews were about Logistical Networks project, observations at program meetings and at other project meetings [fieldnotes] and the surveys conducted for the monitoring report [document nr. 24, appendix III] indicate that this was also the case for other projects.

to them, a process in which it was often suggested that participants lacked the necessary intellectual competences to ‘understand’ the philosophy on transitions. Because the transition-terminology was imposed from above, participants had the feeling that they did not have a choice in applying it. Rather than being an ‘origin’ of the language they used, they seemed to be ‘pawns’ in a broader transition discourse.

4.4.3. Which interpretative styles prevail?

As discussed in chapter 4, intrinsic motivation depends on positive task assessments, which in turn depend on individuals’ interpretative styles; the way in which they attribute cause and effect, evaluate success and failure, and envision future events (and their own role therein). Obviously, such interpretative styles differ for each individual, but a few observations can be made about the interpretative styles that seemed to dominate within the Transumo context.

The first, most obvious observation concerns the interpretative style that is inherent to prevailing ‘transport discourse’ (as described in *Intermezzo A*). There is a tendency of both academic and practitioners to approach transport issues in quantitative, economic, and technological terms. Even though Transumo emphasized the importance of ‘long-term thinking’ and ‘social learning’, there still was an overall urge to produce concrete, short-term, quantifiable results, preferably a new concept that business could profit from, while ideally ‘also’ more ‘environment friendly’. The fact that the *Rush Hour Avoidance* project was considered to be Transumo’s most successful project, illustrated how success was still primarily evaluated in terms of short-term, quantifiable results, (not to mention various projects that were evaluated in terms of their optimisation potential).

Moreover, as mentioned earlier, it was often emphasized that transport was derived from other sectors, and that the direction of the transport sector was determined by greater, exogenous forces such as globalisation and economic competition. It was striking to notice that, whenever the ‘transition to sustainable mobility’ was explicitly discussed,⁸⁹ at some point the ‘crisis-thesis’ came up; the belief that some kind of crisis (e.g. oil crisis) was a necessary condition for the transport system to transform. This illustrates a particular interpretative style in attributing cause and effect; the causes lie neither with the respective individuals nor in the transport sector, but rather in *exogenous trends*. This also says something about the way in which individuals envision future events and their role therein. Overall, individuals thought in linear and extrapolative terms, as a result of which the concepts of transition and sustainability were seen as ‘idealistic’ and ‘unrealistic’. The only way in which the majority of individuals could identify with the transition terminology, was by imagining an exogenous disruption, i.e. a world crisis that would ‘force’ the transport sector to transform.

It was also striking to notice the frequent appearance of ‘constructivist discourse’ during Transumo-meetings. There seemed to be an overall allergy to ideas that could be

⁸⁹ Fieldnotes [several meetings, e.g. meetings nr. 77, 96, 120 and 138, appendix I]

interpreted as social engineering⁹⁰, and as the concepts of transition (management) and sustainability were often associated with social engineering, participants felt sceptical towards these concepts. Interestingly, ‘constructivist language’ was often used by consultants to reframe the transition (management) discourse. For instance, the consultant in charge of organizing a bottom-up ‘vision capturing process’, used the concept of ‘story-lines’ to (re)frame and communicate the idea of ‘transition to sustainable mobility’. It was argued that the ‘transition to sustainable mobility’ was a story-line that could be used as an instrument to provide people with a sense of direction, whether or not the respective vision was ‘true’⁹¹. Other consultants, in an essay called *Transition as Benchmark*, expressed the fear that ‘transition thinking’ would serve ‘one strong actor’, i.e. a ‘controlling government’⁹². They emphasized that ‘transition thinking’ should *not* be about one sustainability vision, nor about system innovations or breakthroughs, but rather about incremental developments in which *all* actors that provide solutions would be taken into account, as well as everyone’s opinion on what sustainable mobility is.

When we look at the *combination* of these different interpretative styles that were dominant at Transumo meetings, we observe a peculiar mix of *positivistic, linear and quantitative* interpretative styles by transport experts on the one hand, and a *constructivist* interpretative style by consultants and process-advisors on the other hand. The ironic result is that constructivist scepticism seemed to be applied only *selectively*: it was used to doubt the ideas of transition (management) and to doubt the need for a vision on sustainable mobility, but it was not used to doubt certain assumptions and paradigms in transport discourse (i.e. economic optimisation, extrapolation of current trends, the idea that market mechanisms safeguard individual freedom of choice, or that the that Netherlands need to safeguard their ‘competitive position’ on the world market).

4.4.4. To what extent is there a culture of empowerment?

Although Transumo involved some aspects of an empowerment culture, (which were inherent to its project-based network structure), many aspects of hierarchical culture (chapter 3, section 3.3.2.) were heavily present. Projects were primarily focused on planning rather than visioning, in evaluations there was a focus on individual responsiveness by project-leaders rather than team responsibility by all participants, there was an explicit ‘pyramid’ structure (boards, steering groups, management teams etc), control and monitoring was based on top-down Transumo standards rather than self-monitoring by participants, and project-leaders often complied with program formalities and stakeholders interests instead of making own judgments. Such hierarchical and formal structures – both at the program-level and at the project-level – created an atmosphere of risk-avoidance and compliance, which is in direct opposition to intrinsic motivation.

⁹⁰ Fieldnotes [several meetings, e.g. meetings nr. 101, 105, appendix I]

⁹¹ Fieldnotes [meeting nr. 77, appendix I]. Also see: [document nr. 23, appendix III]

⁹² Nooteboom & Van der Heijden (2007) pp. 14-15 [document nr. 17, appendix III]

The ‘theme-leaders’ and ‘project-leaders’ in Transumo-projects can be compared to (mid-level) managers in large organizations. Many Transumo project-leaders felt that they were somehow supposed to apply transition management, but did not receive the necessary support on how to deal with subsequent dilemmas. They had to deal with steering groups, stakeholders, subsidizers, and other project-participants, and on top of that with Transumo’s formalities. Not only did stakeholder-interests conflict within projects, they also conflicted with Transumo goals and expectations. To complicate things further, Transumo itself was also under scrutiny of supervisory bodies, and its board members, directors, and facilitators also had differing opinions on the degree to which long-term transition ambitions and ‘sustainability’ should be aspired, and on the extent to which transition management should be applied within Transumo.

Looking at this organizational whole, we see a hierarchical complex in which project-leaders received conflicting messages, and were primarily preoccupied with keeping everyone above, under, and next to them satisfied, living under a continuous risk that subsidies might be removed. As a result, they increasingly worked on the basis of extrinsic motivation, and it is thus not surprising that the project-leaders lacked the intrinsic motivation to apply transition management and transform their ongoing projects. Although Transumo organized various workshops on how to deal with the challenges of ‘the transition to sustainable mobility’ and the application of transition management⁹³, such meetings were received with mixed feelings; some participants found it inspiring and helpful, others claimed it was vague, time-consuming, and a distraction from concrete project results⁹⁴.

‘Failed’ attempts to apply transition management, and the evaluation thereof by others, was disempowering, for some even up to the point of resignation. Illustrative in this regard, is the case of the cluster *Logistical Networks*. Both the theme-leader and project-leader of the two *Logistical Network*-projects ended their involvement with Transumo. They expressed their dissatisfaction with the process in interviews, and in a letter⁹⁵ and an email⁹⁶ directed at Transumo. They mentioned several reasons for their departure, emphasizing administrative hassle, the lack of a clear mandate from Transumo, and the lack of additional subsidy necessary to carry out certain pilot experiments. They also complained that they had not received satisfactory support for ‘transitions’ and ‘transition management’, and that an evaluation of their projects on that basis was thus unjustified. In his email the project-leader stated that Transumo had never explicitly requested him to include the transition approach as a leading frame, that the projects had been started without ‘transition knowledge’, and that retrospective evaluation of his projects in terms of transition potential was based on a new set of rules that were made up during the process and never adequately communicated to him.

⁹³ As discussed in section 5.1. and 5.2.6, during these workshops project-leaders presented their concrete challenges to each other, and ‘transition researchers’ were invited to help structure the discussion and offer suggestions on how to move on.

⁹⁴ Fieldnotes [informal conversations at / after various Transumo meetings]

⁹⁵ Resignation letter theme-leader [document nr. 43 appendix III]

⁹⁶ Email project-leader *Logistical Networks* projects [document nr. 44 appendix III]

The theme-leader that resigned was known to be an especially inspiring, enthusiastic, and intrinsically motivated individual with a wide network of connections in the logistics sector, and a rare ability to get transporting companies enthusiastic to be involved in new logistical concepts developed in academia. As far as the theme-leader lacked competences, he himself was openly aware of it and explicitly requested support for the challenges he faced. This particular incident illustrates the risk of disempowering and 'loosing' individuals that initially had a high level of intrinsic motivation. The theme-leader of *Logistical Networks* – both in his resignation letter to Transumo and in an interview⁹⁷ – expressed a deep disappointment with the support he received to actually apply a transition management approach. Initially, the theme-leader was enthusiastic about transition management, as he believed it would help him to lift his efforts in the logistical sector to a more strategic level. He had hoped that 'all the talk about transitions' would mean that he would receive practical and strategic support on how to spread innovative ideas on integrated logistical networks, and how to get the right parties committed to practice them. This, however, did not happen. In a reaction to his resignation letter, the Transumo-organization noted, (amongst many other things), that the theme-leader might have been 'too ambitious' and 'set his mountains too high'. Although the Transumo-organization did draw lessons from this experience, and organized 'transition workshops' later on, it came too late for the managers that resigned. After the theme-leader and the project-leader decided to leave, the *National Network* projects ceased to exist as a Transumo project. The *European Networks* project received a new project-leader and became part of Transumo's 'transitioning trajectory'⁹⁸.

As discussed in chapter 3, there is an inherent paradox in the concept of empowerment, which was manifested in Transumo in several ways. On the one hand, Transumo empowered transport experts, in terms of providing them with a platform to disseminate their expertise to business and government actors. On the other hand, Transumo *disempowered* transport experts, in the sense that it made them *dependent* on what business and government actors found to be 'useful' expertise. The set-up of Transumo – and the entire BSIK-context – was based on the 'power of knowledge', in the sense that appropriate knowledge was seen as a necessary condition for sustainable development. We saw this relation between knowledge and power manifested in the authority of experts in both written and spoken word, expressed by professors, doctors, PhD-students, and consultants in presentations, scientific articles, and reports. However, the interesting thing about Transumo, and the BSIK-approach more generally, is that its transdisciplinary principles also *questioned* scientific authority, in the sense that knowledge alone was regarded useless as long as it was not 'translated' and 'applied' to practice. Government

⁹⁷ Interview [nr. 27, appendix II]

⁹⁸ In this transitioning trajectory, Transumo connects transition researchers to project-leaders with the aim of mutual learning on how to 'transition' an ongoing project, i.e. how to apply transition management to a project that has not been designed according to transition management. The end results of this transitioning process, and the perception thereof by the project-leader, are unknown to the researcher and have thus not been included in this study. For information about this transitioning trajectory, see Van der Bosch (2010).

officials and business representatives needed to participate in the development of knowledge for it to have authority.

Transumo projects involved ‘powerful’ participants, e.g. large production companies or a Port Authority, and relatively ‘weaker’ participants, e.g. small governmental institutions or small research institutes. Various challenges emerged in the cooperation between project participants with differing backgrounds. For instance, a participant in the *Logistical Networks* projects explained that transporting companies had an inferior position to production companies⁹⁹. He also stated that this ‘unsustainable’ relationship was confirmed within the project meetings, as production companies had the upper hand in project meetings, while representatives of transporting companies were afraid to open their mouth. Other conflicts emerged as the largest company representative complained that the main researcher involved in the project had ‘no clue about business’ and was only interested in getting research data without giving anything useful in return¹⁰⁰. The researcher, on his turn, complained that this company wanted to merely use the research results to make profit while not being willing to contribute to the production and sharing of knowledge, while this was the aim of Transumo-projects¹⁰¹. One can argue that the ‘tripartite’ Transumo-construct of ‘demand-driven’ research aimed to empower business and governmental institutions by enabling them to co-determine the direction of applied research. However, such ‘transdisciplinarity’ also had a disempowering effect on researchers, when they were incapable of standing up against the demands of powerful businesses and governmental institutions that participated in a project.

Besides the empowerment-disempowerment paradoxes between researchers, business representatives, and government officials, one can also ponder on the (dis)empowerment of those actors that Transumo did *not* involve. As shortly mentioned in section 4.2.2. (*who transforms?*), NGOs and citizens were poorly represented in Transumo. Transumo projects mainly featured business, science and government, as their ‘cooperation’ was expected to contribute to ‘a transition to a sustainable society’. We thus face a situation in which a national policy ambition covered by a subsidy of 60 million Euros for applied research (i.e. the BSIK-subsidy), resulted in projects that mainly featured researchers, consultants, large companies, trade-organizations, and governmental institutions, while other segments of society remained uninvolved. I observed that this also had a disempowering effect on the project participants. Although this sounds paradoxical (as they were initially empowered), this paradox occurred as participants started feeling that their project was not ‘making a difference’. It was striking to notice the cynical tone in which participants spoke of notions such as ‘sustainable mobility’ and ‘transition’. Even though the importance of these notions was underlined and confirmed all around in policy documents, program-ambitions, and large bags of subsidy money, participants failed to see how all these investments actually helped to improve society. As this decreased a sense of impact and meaning, the intrinsic motivation to make the projects part of ‘a transition to sustainable mobility’ diminished.

⁹⁹ Interview nr. 26 [appendix II]

¹⁰⁰ Interview nr. 23 [appendix II]

¹⁰¹ Interview nr. 24 [appendix II]

As such, I would argue that the empowering potential of Transumo – in terms of involving citizens, and in terms of fostering intrinsic motivation for sustainability transitions – was relatively limited. Having said that, Transumo did obviously empower its participants to contribute to sustainability transitions, by providing and sharing resources (e.g. money, a website), strategies, and skills. Although I argued that these strategies and skills were limited to *research* strategies and skills (i.e. presenting and publishing transport expertise), and that certain strategies and skills seemed to be lacking (e.g. lobbying, political debate, etc.), one can argue that the mere confrontation between researchers and consultants with business and government actors within Transumo projects, provided a ‘practice ground’ to gain new strategies and skills. As such, the conclusion is not that Transumo did not empower its participants, rather the conclusion is that this empowerment was limited.

4.5 THE TRANSITION POTENTIAL OF TRANSUMO

This section addresses the following two-fold question: *what if the plans and proposals provided by Transumo would be realized, what kind of power would be exercised to enable a sustainability transition, and to what extent would actors be empowered?* As explained in chapter 3, the aim of this question is *not* to ‘predict’ the future contribution of Transumo to ‘the transition to sustainable mobility’. The question is not to what extent Transumo’s ideas were, are, will, or might be realised or ‘scaled-up’. Rather the question is *what if* Transumo’s ideas would be ‘scaled-up’; *would* that be ‘a sustainability transition’, and if so, *what kind* of transition would that be? How would the resulting mobility system differ from the current one? To what extent would power relations differ from the current ones? Who would be empowered by these changes? To answer these questions, this section synthesizes the answers given in previous sections, and combines this with an elaboration of Transumo’s vision on sustainable mobility in 2040.

As stated earlier, the idea of “Seducing & Rewarding” - instead of punishing – travellers towards desirable behaviour through financial stimuli, was a recurring theme in Transumo. If this rewarding principle would be ‘up-scaled’ (to include not only individual travellers but also companies), this in itself can be constructed as a ‘paradigm shift’: *from punishing to rewarding*. Assuming that ‘rewarding’ is more effective as well as socially and politically more accepted than ‘punishing’ (as Transumo research aimed to demonstrate), we can construct the following transition story-line; from the current situation, in which the government struggles and hesitates to ‘impose’ sustainable practices on to its citizens and commercial sector, to a government that ‘seduces and rewards’ citizens and companies to engage in sustainable practices. Interestingly, this transition story-line is not transport-specific; it is a general paradigm shift that can be foreseen for various other sectors (energy, housing, food, etc). Although this generality speaks in favour of the transition potential of the concept itself (i.e. it can be ‘up-scaled’ to other fields), it does leave us with the following question: what are the system innovations in the *transport* sector? How exactly would the future mobility system look different from the current? Without an answer to that question, one can argue that the ‘rewarding’ principle in fact *optimises* the current mobility system, by enabling it to continue in its current form.

Let us move on to the mobility transition that Transumo sketched in its final vision document. Although Transumo was modest in its communication with regard to which transition it foresaw, it did present a future image of sustainable mobility in 2040, and a transition path towards it, that was in line with many of the concepts developed in its projects. Some of the most overarching elements of this vision can be compiled as follows:

‘Individual freedom’ and ‘self-steering’ are core values in the society of 2040, but as a result of international competition and great global challenges the public sector has a greater say and has become more decisive. There are equal partnerships between the public and private sectors. The mobility and transport system remains user-oriented, but at the same time there is greater focus on coordination, collaboration and harmonization in development, operation and use (...). In 2040 individuals attach more value to the functionality of the mobility and goods transport system than to, for example, the image value of owning their own car.

Non-sustainable services, processes and goods are regarded by society as ‘inferior’; it is self-evident that costs for ‘unsustainability’ are charged (...). The ‘money’ factor remains an important motive for participant behaviour and remains the central unit of settlement. Paying for unsustainable mobility behaviour and rewarding sustainable mobility behaviour are therefore accepted. Central government encourages sustainable mobility through fiscal measures and employs strict regulations with regard to emission limits, noise pollution and ecological values. At the decentralized level, the government uses structural measures (planning decisions, public transport concessions, roads and cycle paths infrastructure), encourages changes in the behaviour of people on the move (e.g. through mobility management), ensures a good information system and facilitates the business sector’s innovative initiatives.

The logistical and passenger transport services work very efficiently through the use of ‘self-steering’ mechanisms and the application of new coordination mechanisms in logistics. Compared to the current situation there is actually more rather than less transport, but (in terms of capacity usage) it is spread more favorably over the day, with a more balanced distribution in journey direction and, where it makes sense, also in a more consolidated form. Intermodal information and mobility services fulfill an important role in accommodating the mobility and goods transport needs. Infrastructural, technical, organizational and financial provisions facilitate the implementation of these services. (...)

The Amsterdam / Schiphol and Rotterdam main ports are important centres for the economy with a strong emphasis on their ‘controlling role’ in global logistics and transport chains, in the creation of added value and in logistical and trade-related services. The controlling role is used not only to make goods flows more efficient in economic terms, but also to get them to run more sustainable and more safely. Furthermore the controlling role will be used to accommodate ‘closed’ production cycles, as a result of which far more components and materials can be reused and unnecessary ‘empty’ transport can be reduced.¹⁰²

¹⁰² Transumo Vision 2009 pp. 9, 10, 13, 14 [document nr. 21, appendix III]

With regard to regime-replacement, this vision seems to draw a picture of the *current regime grown stronger*; the public sector “has a greater say” and becomes “more decisive”, and so does the private sector (‘equal partners’), there will be a “central government [that] encourages sustainable mobility through fiscal measures and employs strict regulations”, and the dominant position of Amsterdam airport and Rotterdam seaport has been “strengthened” as “centres for the economy with a strong emphasis on their ‘controlling role’”. However, the supposed difference, (compared to the current situation), is that this regime encourages ‘sustainable’ mobility, which ‘replaces’ the current regime that is primarily focused on economic targets. Moreover, new actors will enter the regime; *mobility managers* at several organizational levels encourage desirable mobility behaviour, and *supply chain managers* facilitate close production cycles throughout the globe. When analyzing these excerpts, with the distinction between ‘reinforcive power’, ‘innovative power’ and ‘transformative power’ in mind, the following observations can be made.

Reinforcive power plays a crucial role: in terms of traffic-, information- and communication-flows, and subsequent government control thereof, the envisioned mobility system in 2040 has been greatly optimised in comparison to the current one. To such an extent even that it enables *more* transport, a government that has a *greater* say and a *stronger* position for Schiphol airport and Rotterdam seaport on the global scene. This reinforcive power is enabled by *innovative power* in the field of ICT, traffic management, vehicles, infrastructure, and fiscal law, which enable a strong Dutch government – with the help of ‘mobility managers’ through out the nation – to inform, coordinate and ‘seduce’ all corporations and 16 million citizens to ‘self-steer’ themselves and their goods around in the most efficient, safe and environment-friendly way. The *transformative power* in all this, is that this astonishingly optimised efficiency supposedly serves sustainability targets, that are valued *as more important* than economic targets, by both public and private actors as well as overall Dutch society.

The last sentence points to the core ‘transition potential’ in Transumo’s ideas; that the Dutch transport sector can employ all its logistical and technological ingenuity in efficient organization, in *service of a sustainable society* that values quality of life over prosperity. Although this makes the vision highly dependent on transitions in other sectors (energy, material use, spatial planning, and overall government policies), the mobility sector can play a pivotal role in *enabling* these other transitions, by demonstrating that it is ready and willing – both in technological and organizational terms - to efficiently facilitate these other transitions. Transumo has constructed an image of a mobility system that does this, and developed several concepts that can operationalize this image.

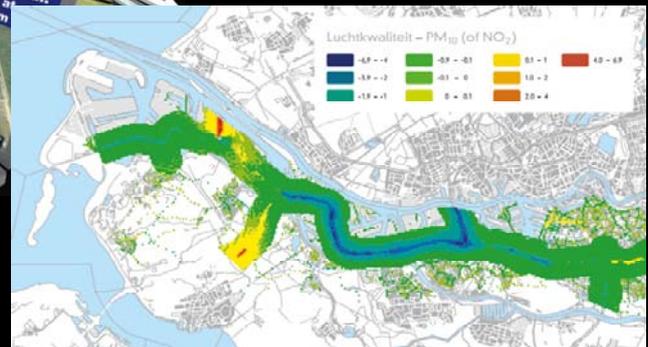
However, in terms of power relations, the current exercise of power by government and business is not only unchallenged, it is actually significantly reinforced and strengthened. This leads us to the issue of empowerment. What if Transumo’s ideas would be ‘scaled-up’, what if Transumo’s vision of mobility in 2040 would become reality, *who would be (dis)empowered by this new mobility system?* Essentially, the new situation envisioned by Transumo would empower Dutch government officials and business actors, mobility managers, and supply chain managers to organize the mobility system. The underlying

assumption is that these actors would serve a society that values sustainability over economic targets. In a way, there is an implicit suggestion that this would (indirectly) 'empower' Dutch citizens, in the sense that these citizens would be offered a wider variety of 'mobility services', from which they could 'freely choose', depending on how much they would be 'willing' to pay. There are, however, a few serious empowerment-disempowerment paradoxes in this picture.

First, citizens would become (more) dependent on those providing 'mobility services', i.e. government and business actors and their respective 'mobility managers'. Second, the very concept of 'seducing and rewarding' citizens towards desirable travel behaviour, is based on a psychology of *extrinsic* motivation, rather than intrinsic motivation; travel behaviour would literally depend upon the 'supervision and rewards mediated by others', (which is the essence of extrinsic motivation, as discussed in chapter three). Third, the mobility system that Transumo envisions would require the integration of transport surveillance systems, traffic flows, and financial flows, which in turn would require highly interconnected and sophisticated ICT-technologies throughout the transport sector. This means that in order to profit from the provided 'mobility services', citizens would have to cooperate with this integrated system; purchase the necessary technological products and provide the necessary information on when and where they travel. Besides the moral objections that citizens could have against this, there would also be an issue of social exclusion of all those citizens that would, for some reason or another, not be integrated in this system, e.g. homeless, refugees, convicts, children, tourists, etc. Although Transumo's vision speaks of a self-steering and flexible system that safeguards social inclusion and individual 'freedom of choice', one can question to what extent this envisioned mobility system would enable the free movement of all people through time and space.

CHAPTER 5.

Case-study A15-Project



5.1. OBSERVING THE A15-PROJECT

5.1.1. Background and context of the A15-project

The project under study was officially named *From Maasvlakte to Hinterland: Sustainable Freight Transport as Challenge*, but generally referred to as the *A15-project*. It was part of *Transumo* (see chapter 4), under its 'thematic cluster' on 'governance processes'. The 'Maasvlakte' is the name of an industrial zone built in the sea port of Rotterdam. It was created because there was more space needed in the Euro Gate¹⁰³. In the mean time a second Maasvlakte (referred to as MVII) is being built in the North Sea. The A15 is the main road that connects the port with its European 'hinterland'. Because of the second Maasvlakte and its accommodation of increasing global transport flows, it was expected that the traffic over the A15 road would highly increase, and that the capacity of the A15 after 2012 would reach its limits, despite of the government's plans to invest in enlargement of the A15 between 2008 and 2012. The A15-project, which started in 2006 and ended in 2009, aimed to 'find solutions for the emerging problems around the accessibility of the Rotterdam harbour from 2012 onwards'. These problems included increasing congestion on the A15 and the negative environmental effects on the surrounding region, resulting from the ever increasing freight transport.

The project was based on a consortium of more than 200 organizations, of which seven organizations formed the 'core partners'. The consortium included a university and other research institutes, (semi-) governmental organizations, various companies from the A15-region including the Port company, and a business-association representing a large group of companies. The project was categorized in a 'steering group', a 'management team', a 'business council', and a so called group of 'knowledge workers'. The steering group consisted of the 'VIPs' of the seven core partners (e.g. directors, full professors, etc.). The management team consisted of middle-management representation of the seven partners, including the project-leader and 'assistant project-leader'. The main project-leader worked at the Erasmus University of Rotterdam (hereafter referred to as project-leader), the assistant project-leader worked at TNO (hereafter referred to as assistant project-leader or as a member of the management team). These three groups (steering group, management team, and knowledge workers) met independently from each other on a regular basis to discuss goal-setting, planning, task-division, and 'deliverables'.

5.1.2. My involvement in the A15-project

My involvement in the A15-project can be categorized in three categories: 1) participant observation in the knowledge-worker meetings, 2) participant observation in the 'open' project meetings, and 3) action research in advising the project-leaders on how to apply transition management, and, as a result thereof, helping to organize an additional 'transition trajectory'. In 2005 a few meetings were held with representatives from DRIFT,

¹⁰³ Euro Gate ('Europoort') is the complex of ports and industrial areas that was created in 1956 between the city of Rotterdam and the North Sea

Transumo, and the A15-project, in which my involvement in the A15 project was discussed. I was told that I was to bring in 'the transition (management) perspective'. In 2006 I was invited to join the 'knowledge-worker-meetings - organized every three to four months - and discovered that these meetings primarily consisted of discussions about computer traffic models. Although I was introduced as 'the researcher who would look at the transition (management) perspective', there was little space to bring in this perspective within these particular meetings. I did try in the beginning, in the sense of questioning the underlying starting points of the traffic models, such as chosen time frames, regional boundaries, and problem statements. It was obvious however, that the knowledge-worker meetings were a rather inappropriate context to bring up such questions. As there seemed to be no space for me to play an active role in shaping either the content or process of these 'knowledge-worker meetings', I decided to just observe the ongoing discussions and learn about 'traffic modeling discourse'. Besides the 'knowledge-worker meetings', I also attended the open project meetings (open to all project participants and external partners), starting with the official 'kick-off' meeting in September 2006, followed by several meetings every three to four months. In December 2006 I also participated in a meeting, to which all business participants were invited to discuss their ideas on what the main problems were in the A15-region. The content of all these meetings will frequently come up throughout the analysis in this chapter.

I was invited to 'advise' the project management on a few occasions, which eventually led to an additional project trajectory, in which I came to play an active role. In November 2006 I was invited to a meeting to discuss the 'second phase' of the project, including the role of transition management therein. Present were the project-leaders, an assistant, and a *Transumo* representative. I prepared a document in which I identified three different options for applying transition management in the A15-project:

- *Option 1. Two track project* Two different approaches could be applied parallel to each other; on the one hand the classical project set-up, as planned and executed so far, on the other hand a transition management process.
- *Option 2. Adaptation.* The classical project set-up would be adapted to a transition management process.
- *Option 3. Middle way.* This option would consist of option 1, but rather than having two separate trajectories, the two trajectories would be confronted with each other at specific 'contact moments'.

During the meeting there was a preference for option 1 or 3, both by the project participants and the *Transumo* representative. In January 2007 the three options were discussed in the management team, and it was decided and communicated to me that I was to help 'develop the transition management theme within the project'¹⁰⁴. It was only in June 2007 that a meeting was scheduled with the project-leaders to discuss *how* exactly to shape a transition management process within the project¹⁰⁵. Besides the project-

¹⁰⁴ Email project-leader A15-project [document nr. 45, appendix III]

¹⁰⁵ Fieldnotes [meeting nr. 80, appendix I]

leaders and myself, the meeting was attended by two new assistants. The main project-leader stated that so far ‘little had been done with transitions’, because the project had still been in an explorative phase, so far had focused on traffic related issues, and that the aspects of process-innovation had disappeared. Now the question was how transition management could be applied. The project-leaders directed themselves to their assistants and myself as ‘young, fresh people’ and asked us to come up with ‘a plan for an alternative trajectory parallel to the regular trajectory’. In the minutes of the meeting this was formulated as follows: “it is proposed to give ‘the youth free play’, that is to let them come up with a plan to give concrete shape to the process”¹⁰⁶. We were told that we would cooperate with a process-manager that was hired to facilitate the sessions, that the plan should be ready by September, and that the process should be finished by December 2007.

And so it came, that the assistants and I worked out a plan on how to shape an alternative, parallel ‘transition trajectory’. We invited an additional PhD-student – who was involved in ‘monitoring’ and researching *Transumo* – and a student intern to join our ‘young-alternative-trajectory-team’. Together with the hired process manager a final plan and budget proposal was prepared, which was presented to the management team of the project, and also to *Transumo*. The ‘transition-trajectory’ was not financed out of the budget of the A15-project, but out of additional funding received from *Transumo* (a total of €36,950). As our alternative trajectory had to be prepared, conducted and reported within three months, it was impossible to realize a full-fledged transition management process. As such we decided to call our alternative trajectory the ‘innovation impulse’, rather than ‘transition trajectory’.

The innovation impulse essentially consisted of two brainstorming sessions (in October and November 2007) with an alternative group of ‘innovators’, most of which had so far not been involved in the A15-project. The main project-leader and one member of the steering board were also present at these sessions. The sessions were prepared and organized by us, and the meetings themselves were facilitated by the hired process-manager. The set up of these sessions was inspired on transition management, as we tried to integrate as many aspects as possible, the most important one being the selection of ‘innovators’ and the set up of the sessions. We selected and interviewed over 20 people and had intense discussions about whom to select and how to shape the sessions. While I could write an entire chapter about this innovation impulse, this case-study is rather about analyzing the A15-project as a whole. The innovation impulse is only discussed as far as it tells us something about transition (management) and power relations in the A15-project. For more information on the innovation impulse I refer to our report on the innovation-impulse (Avelino et al. 2008), two online video-compilations that provide a visual impression of the sessions¹⁰⁷, a conference paper (Avelino & Bressers 2008), and a published book chapter (Bressers et al. 2011).

¹⁰⁶ Minutes meeting A15-project [document nr. 46, appendix III]

¹⁰⁷ <http://www.gaztion.nl/sfeerimpressie.wmv> and <http://www.gaztion.nl/sfeerimpressie2.wmv>

From 2008 onwards, my involvement with the A15-project diminished as I stopped attending project meetings, although there were still some action research activities. In 2008 I was invited to two thematic *Transumo* meetings to present our experiences with the 'alternative trajectory', and in May 2008 I participated in an international transport conference organized by the EUR-project-leader, where we presented a paper on the A15-project. Moreover, in 2008 the 'third round' of the A15-project was started, in which the project outcomes were further explored in six thematic working groups. One of my DRIFT-colleagues was invited to lead some of the meetings of a thematic working group, and I was asked to help integrate transition (management) insights into some study documents of this thematic working group.

I have mixed feelings when looking back at my involvement in the A15-project. During several meetings I was introduced as the one 'providing the transition management perspective', while it was rather unclear to everyone – including myself – what this was supposed to mean. On several occasions, project participants approached me to say something about 'transitions' or 'transition management', either that they found it 'very important', 'still lacking in the project' or 'vague'. Illustrative in this regard is that the assistant project-leader once directed the word to me during a project-meeting and asked: "what does the book of that guru of yours say about this?" At first I felt quite uncomfortable with this assigned role as some sort of transition management advocate, since I was merely a PhD-student; still learning what transition management was, with my own doubts and critical questions. However, I soon learned not to take any of this personal. Placing myself in their position and imagining how transition management discourse came across to them, I could understand that some had a skeptical and joking attitude. I tried to find a balance between understanding this skepticism on the one hand, and still trying to apply transition management insights as far as this seemed realistic and useful for the project – not just because I 'believed' in the added value of transition management, but also because this was what I had been invited to do so in the first place. As for the innovation impulse, the intense cooperation with the assistants, PhD-student and student intern, was without a doubt one of the most pleasant experiences in my fieldwork activities. In terms of sustainability it worried me that the innovation-impulse sometimes seemed to be marginalized as a 'fun youth project'. However, as this 'fun youth project' seemed to be the only 'niche' available in the project, I decided to take this opportunity and make the best of it. In chapter 8 I will critically reflect on transition (management) action research, and distill what we can learn in terms power relations and empowerment.

5.1.3. Data-collection in the A15-project

Methods applied to collect data on the A15-project ranged from ethnography, participant observation, action research, interviews, and document reviews. All project activities that I was involved with – as described in the previous subsection – have been used as input for this case-study, and will come up in the analysis at some point. A detailed list of all meetings, documents, and interviews (including interview question) used for this case-study, is provided in the appendices. My participant observation and action research was focused on the interactions with and between the 'project-leaders' and participants (i.e.

‘the knowledge workers’ and external partners), rather than on the internal dynamics of the steering board and management team. Some other members of the steering board and management team have been interviewed, but most of them were only observed ‘in action’ and ‘from a distance’, during open meetings and conferences. The A15-project has been primarily observed at the operational level, from the perspective of the project-leaders and participants, and how *they* perceived, communicated, and discussed the actions and decisions of the steering board and management team.

It should also be mentioned that my participant involvement ended before the A15-project was finalized. I did not follow the final phase of the project – when it was split up in several working groups – through participant observation, action research or interviews, but merely through documented reports of these working groups, as included in the final synthesis report of the A15-project. As such, my empirical observations are focused on certain groups and a certain period of time, thereby not being representative for all the activities that occurred in the A15-project. This would be a problem if the aim was to evaluate the A15-project for its overall success, but, as stated earlier, this is NOT the aim of this (or any other) case-study. The aim is to learn of my observations within A15-project. This means that in the following pages, whenever I speak of the A15-project or its participants, one should read ‘the A15-project as far as observed’.

5.2. TRANSITION AMBITIONS IN THE A15-PROJECT

5.2.1. *What is to be transformed: why, how and when?*

The A15-project differed from many other Transumo-projects in that it focused on a regional entity (rather than a sub-sector); the A15-corridor and its regional surrounding (i.e. the *Rijnmond* region). The project “focuses on the region around the A15 from and the Rotterdam harbour region. The focus is primarily on the region of Rotterdam, which contains eighteen municipalities”¹⁰⁸. The project described its goals as “realising sustainable solution directions on behalf of the transport of goods and people. The driving force behind this project is the gravity of the problems around the expected traffic increase on the A15 and the subsequent traffic related and societal problems”¹⁰⁹. The regional dimension complicates which ‘system’ was at stake, as this included various (but not all) functional sectors within the region. In fact, this very delineation was a point of discussion during several project meetings. The final brochure states the following:

“Road transport plays an important role in the project, because of its direct hazard for the surroundings, but there has been an explicit choice for an integrative approach. Because inland shipping, rail transport, transport by pipes and public transport are also important in the Rotterdam harbour region, the focus is on *all modalities* of transport for *both freight and passenger transport*”¹¹⁰.

¹⁰⁸ Final brochure, page 6 [document nr. 32 appendix III]

¹⁰⁹ <http://www.traverse.nl.sharepointsite.com/Traverse/Platforms/Transumo/Projecten/Maasvlakte/ aspx>

¹¹⁰ Final brochure, pp 6-8 [document nr. 32 appendix III]

Essentially, what needed to be transformed concerned the way in which transport was organized in and around the A15-corridor. This included a physical aspect (infrastructure and technology) and a management aspect (governance arrangement, public private cooperation, business partnerships etc). Change was necessary because freight transport was expected to increase (triple by 2033), and the A15-corridor expected to reach its limits around 2012, in terms of both traffic capacity and environmental impact.

As most Transumo projects, the A15-project tackled its challenge primarily through research; gaining better insight on what the problems were and how they could be dealt with, and communicating these insights to relevant partners, mainly through reports and meetings. The group of 'knowledge workers' - researchers and consultants working at research institutes, the harbour company and two semi-governmental organizations – mostly worked on; 1) collecting, analyzing and applying quantitative data (with regards to traffic and environmental effects in the A15-region) in traffic models, and; 2) identifying possible solutions to deal with these problems, calculating and visualizing the effects of these solutions in several scenarios, and making recommendations on that basis. The 'knowledge-workers' also produced the majority of 'deliverables', in which project results and visualizations thereof were formalized and thereafter communicated to other project participants. Besides the knowledge-worker meeting, there were also 'open' meetings to which all project participants were invited, as well as actors with an evident stake or interest in the theme (researchers, consultants, company representatives, government officials, environmental activists, etc). These open meetings provided a forum in which the 'knowledge-workers' presented their 'deliverables', and the 'others' were asked to comment, discuss, and give input with regard to a specific theme.

The project consisted of 'three rounds'. After the environmental and traffic related problems had been studied and presented in several 'deliverables' (2006), the focus turned to identifying possible solutions and calculating the effects thereof (first round, starting in 2007). The knowledge-workers put together a 'long-list' of possible solutions on the basis of input from; 1) interviews with stakeholders, 2) a meeting with all the companies that are involved in the project, 3) brainstorming in the 'open meetings', and 4) the expertise of the 'knowledge workers'. This 'long-list' was first shortened to a 'short-list'. The possible solutions on this 'short-list' were 'scored' in terms of their possible contribution to tackle the problems around the A15-project, including criteria such as accessibility, sustainability, feasibility, and 'transition potential'. Finally a 'hot-list' was made with those solutions that seemed most viable. This 'hot-list' was the basis for the first *'oplossingspakket'*, literally translated as 'package of solutions', which included five (categories of) solutions¹¹¹. While this first 'package of solutions' was being formulated in a 'deliverable', several participants expressed their criticism on the solutions not being

¹¹¹ The five categories of solutions were: 1) west-side cross-river connection, 2) innovative passenger transport to alleviate the congestion on the A15 by decreasing passenger cars (through measures such as public transport, transferium, pricing policies etc), 3) separate lanes for freight transport, combined with mobility and chain management, 4) night distribution (spreading out the traffic during 24 hours to avoid peak hours), and 5) 'innovative' modal shift, combined with container transferia.

new, innovative, or radical enough. As such it was decided to give this first ‘package of solutions’ the title of ‘Modern Classical’. The environmental and traffic related effects of this ‘Modern Classical’ package were also calculated and visualized through computer models. All this was included in a shiny and colourful brochure that described the ambitions and progress of project, which was published in September 2007¹¹².

Around that time the ‘second round’ of the project was started, which aimed to give more attention to environmental aspects and innovation. It was decided to have two parallel trajectories during the second round (see section 6.1.2.). One was referred to as the ‘main trajectory’ or the ‘traditional trajectory’, the other was called the ‘transition trajectory’ or ‘innovation impulse’. Both parallel trajectories (the ‘main trajectory’ and the ‘innovation impulse’) produced independent ‘deliverables’ that were presented and discussed (in the management team and the steering group) in December 2007¹¹³ and January 2008¹¹⁴. The resulting new deliverable presented a ‘new package of solutions’ under the title “3D-measures”, an acronym for the Dutch words for “Sustainable, Dynamic and Daring”. This new package added five (categories of) solutions to the previous five¹¹⁵. The effects of these solutions on the A15 (in terms of traffic, air quality, noise, and safety) were calculated and visualised through computer models, resulting in several scenarios (visualised as geographical traffic maps, included in several reports and brochures).

In 2008 the ‘third round’ of the project was initiated, in which the most ‘promising solutions’ were further explored in six thematic working groups¹¹⁶. The different themes were ‘divided’ amongst several project participants, who were made responsible for the working groups in terms of organizing meetings, involving relevant stakeholders, producing study documents, and a final ‘deliverable’ for each working group. In 2009 the outcome of all three ‘rounds’ was bundled in a ‘synthesis report’¹¹⁷. In the end there was a total of 25 official project ‘deliverables’, which were summarised in a public brochure and presented at a final project conference in June 2009, and at Transumo’s final conference in November 2009.

5.2.2. Who transforms?

In its final documents, the A15-project was presented as having worked with around 250 different partners. Seven (of these) partners formed the project organization, represented in the steering board, management team, and group of knowledge-workers.

¹¹² First public brochure A15-projec [document nr. 26 appendix III]

¹¹³ Deliverable 16 A15-project [document nr. 29 appendix III]

¹¹⁴ Deliverable 15 A15-project [document nr. 28 appendix III]

¹¹⁵ The added solutions were: 6) sustainable transit, 7) transport avoidance, 8) spatial planning, 9) sustainability market, and 10) organizational innovation. In the final brochure, the first five solutions are referred to as having a ‘traditional character’, while the last five categories are referred to as having a ‘more innovative character’. See final brochure, p. 20 [document nr. 32 appendix III]

¹¹⁶ The six thematic groups: 1) sustainable inland shipping, 2) organization-impulse container shipping, 3) pricing policy, 4) container logistics, 5) transport avoidance and 6) process innovation.

¹¹⁷ Synthesis report A15-project / Deliverable 25 [document nr. 31 appendix III]

The other partners were involved in terms of participating in one of the many meetings or study projects throughout the years. Similarly to other Transumo-projects (as discussed in chapter 4), the organizers of the A15-project were not themselves directly ‘transforming’ the transport sector, rather they primarily aimed to provide knowledge and build coalitions that they deemed necessary to enable change. The set up of the project was in itself a case of coalition-building, with several powerful organizations from the harbour region represented in the steering group, and hundreds of partners that were invited to meetings and received the project outcomes.

In the third round of the project, there was an explicit intention to go beyond the production of documents, by using the six different working groups to mobilize coalitions around a certain theme, formulate concrete actions for the short-term, and assign specific actors to realise those actions. As formulated in the final brochure:

“this book propose leverages that can accelerate the necessary changes. These leverages have been translated into an action plan. The need for responsible actors has been fulfilled by naming one or more responsible partners for each action. This provides opportunities and concrete possibilities for several stakeholders in the Rotterdam harbour region to make steps towards an accessible and sustainable future. It is a hopeful sign that a number of stakeholder is prepared to initiate the transition. But this is not an easy task. If there is one thing shown by the study, than it is that a transition to an accessible and sustainable region can only be realised if everyone provides a maximum contribution to it. We hope that this project will provide continuing inspiration for that”¹¹⁸.

The ten ‘leverage points’, respective ‘action points’ and assigned ‘partners’, as formulated in the final documents, are summarised in the table below.

	Leverage	Proposed Action	Partner(s)
1	New infrastructure as a driver for sustainable accessibility	New public-private agreements on modal split, environmental zones, CO ₂ reduction, new market-principles based on a ‘fair’ cost-benefit analysis	Rotterdam Port Authority Rotterdam Municipality
2	Adaptive policy for a ‘priced’ region [i.e. pricing policy]	A regional agenda based on scenarios and calculations provided by the A15-project	Stadsregio Rotterdam
3	From modal split to intermodal steering	New governance arrangements between several actors around terminals and transferia	Rotterdam Port Authority
4	Broad attention for transport avoidance	Pilot projects in transport avoidance and traffic distribution (e.g. matching short sea flows, grey containers, night transport)	Deltalinqs
5	Strengthening the position of the sector inland shipping	Setting up a platform for chain management and sustainability of inland shipping	<i>“sector organizations in inland shipping are challenged to...”</i>
6	Experimental zone for sustainable energy and sustainable transport	Research on the harbour as an experimental zone / European example for sustainable transport energy	Rotterdam Port Authority RCI Energy & chemical sector

¹¹⁸ Final brochure, p. 60 [document nr. 32 appendix III]

7	Learning to steer at the front of large change processes	Scenario studies on transport implications of energy transitions (i.e. bio-based economy) and related spatial planning	University Wageningen Erasmus University Rotterdam DCMR
8	Strategy Space and Mobility for the Rotterdam harbour region	'Integrative sessions' with representatives of: A15-project, Stadshavens, IJsselmonde, MIRT-study, containertransferium, Deltapoort	?
9	The Traffic Enterprise (De Verkeersonderneming)	Developing a regional platform for traffic and transport management on the A15	Rotterdam Port Authority
10	Visioning and transition approach as continuous process	Follow up research on mobility management, transport logistics, land use and governance	Erasmus University Rotterdam TNO

Table 10. Summary leverages, action points and actors in the A15-project

When looking at the 'concrete action points' and assigned partners, a few observations can be made. First, it seems that many of the 'concrete' action points actually consisted of (more) research, coalition building, and agreed intentions to agree on something. Second, there are a few categories missing amongst the identified partners: national government, small entrepreneurs, and civil society (e.g. NGOs, citizen groups). This is illustrative for the entire project set-up. Although some representatives of these categories were invited to some of the open meetings throughout the years, they were never directly involved in the project. The fact that the national department of transport (V&W) was not involved in the project, was often mentioned as a problem by project-leaders and participants. I come back to this issue of who-was-not-involved – and to what extent this was seen as either a weakness or strength – in the sections on power and empowerment.

5.2.3. What's new?

The regional and spatial focus of the A15-project distinguished it from many other Transumo-projects. Another distinguishing feature was that the A15-project was presented as a so called 'experimental garden', in which several innovative concepts (also from other Transumo-projects) would be 'connected' and 'experimented with' in practice. As formulated in an early project-proposal:

In this project solutions are brought in by the participants (business, government and research institutes) but also from other Transumo-projects. The set up is not to develop possible measures within the project itself, [the set up is to] team up with work that is done elsewhere, and especially not to do double work¹¹⁹.

One of the main challenges was to gain overview of what 'was already there' – existing problems, solutions, and innovative ideas – and to bring all this together, systematically calculate it, communicate it, and build coalitions around it. Similarly to the overall

¹¹⁹ Project proposal A15-project, p. 12 [document nr. 25 appendix III]

Transumo character, the newness laid not so much in individual concepts, but rather in the combination of technology and governance, and the building of new coalitions:

Transumo A15 makes clear that the great challenge in the transition to sustainable transport lies not in the development of new technology ('techware') but in the development of new governance-arrangements ('orgware'). It is about new contract forms, coalition models and institutional arrangements (...)¹²⁰

Although this may not come as a new insight to some, it was presented as a new insight in the context of the project. In the first session of the 'innovation impulse', the 'innovators' were explicitly asked to add 'more innovative ideas' to the first 'Modern Classical package of solutions'. Unsurprisingly, some pointed out that the challenge was not only to come up with more innovative ideas, but that the challenge was primarily to come up with governance ideas on how to implement the many ideas that were already there. So what was new in the proposed 'governance arrangements'? The essence thereof lied in the idea that government could no longer be held solely responsible for a problem such as the A15-corridor; business should not sit back and 'wait' for government to solve it, but take a pro-active attitude in building new coalitions¹²¹.

Besides coalition building, the project spent a great deal of its resources on computer simulated scenarios. In the 'knowledge-worker' meetings, there were always fierce discussions on which computer models to apply, which studies and quantitative data to use as input, which 'reference situation' to choose as a starting point, and so on. The different research institutes seemed to have different ideas in this regard. Especially the use of TNO's *Urban Strategy* – a modal that coupled several different computer models - caused fierce debates, resulting in the scheduling of extra meetings to discuss whether or not to use it.

Although I do not know enough about computer models to evaluate their level of innovativeness, one can argue that at least there lied newness in the *combination* of; 1) the cooperation between all these different modellers, 2) the integration and comparison of different quantitative scenarios, 3) the combination of qualitative and quantitative research, in which governance arrangements (as discussed in meetings with all participants) were used as input for calculated scenarios, 4) the visualization and communication of the calculated effects in geographical maps, and 5) the translation of the resulting scenarios in accessible governance recommendations. I discuss an example of such a scenario and related recommendation in the next section.

5.2.4. How is sustainability dealt with?

From Maasvlakte to Hinterland: Sustainable Transport as Challenge, the official title of the A15-project, harboured an interesting double meaning. At first glance, the suggestion was that achieving sustainable transport was the main ambition of the project. However, it

¹²⁰ Final brochure, p. 56 [document nr. 32 appendix III]

¹²¹ Synthesis report / Deliverable 25, p. 11 [document nr. 31 appendix III]

also means that sustainability, as a societal trend, was taken as a ‘challenge’ in the sense that the transport sector and the Port Authority *had* to take sustainability in to account, whether they wanted to or not, simply because this was ‘demanded by society’. In many of the project documents and presentations it was emphasized that the A15-project primarily aimed to safeguard the *accessibility* of the Rotterdam harbour, *under the conditions of sustainability*¹²². Accessibility versus sustainability was often posed as a duality in meetings, and participants had a tendency to categorize one another in terms of ‘those that cared more about accessibility’ and ‘those that cared more about sustainability’¹²³. In one specific interview, a member of the steering group stated that there were many discussions in the steering group on the goal of the project, and the concession they found was to frame *accessibility as a goal* and *sustainability as a condition*. Interestingly, the member of the steering group argued that conditions were actually more important than goals, for “a goal is flexible, while conditions are hard”¹²⁴. Sustainability was thus primarily taken as ‘condition’, while the main goal was accessibility. The first sentence in many project documents was: “the accessibility of the Mainport Rotterdam is of great importance to the regional and national economy”¹²⁵. In the computer modelling exercises, it was calculated through which measures the region could solve traffic challenges while ‘fulfilling’ regulations on noise and emissions.

However, according to the final project documents, a certain shift took place in the project with regard to sustainability. The final deliverable reported that “throughout the years (....) the context of the project has significantly changed” and that the project “has continually adapted itself to adequately play in to that”, subsequently discussing the six most important developments and how the project has played in to them. One of the mentioned developments is formulated as “an approaching sustainability offensive”:

... a broader trend that has manifested itself in the past few years, namely an increasing meaning of the concept sustainability. At least in governance terms, sustainability has been strongly embedded at national en regional levels (...) The challenge is to translate the large amount of good intentions into implementation strategies and transition paths. Within the A15-project this has lead to a obtrusive realisation that ‘sustainably accessible’ also requires a more offensive sustainability strategy with targets on life quality, safety and environment that are *more* ambitious than is currently compulsory by regulations (emphasis added)¹²⁶

This ambition, to take sustainability as a (business) opportunity and to go beyond regulative standards, was translated in the 3D-measures (*Sustainable, Dynamic and Daring*, see section 6.2.1), and in the calculated scenarios. The four different scenarios revolved around the combination of *MER-measures* and *3D-measures*. ‘MER’ is an acronym for the official report on environmental effects that was used as a basis for the agreements on the construction of the second Maasvlakte. MER-measures referred to

¹²² Fieldnotes: several meetings, appendix I, and several documents and presentations, appendix III

¹²³ Interviews nr. 49, 52-60, 66, appendix II

¹²⁴ Interview nr. 56, appendix II

¹²⁵ See for instance Synthesis report/ Deliverable 25, p. [document nr. 31 appendix III]

¹²⁶ Synthesis report /Deliverable 25 pp. 21-22 [document nr. 31 appendix III] translated by F.A.

those measures that were expected to be realised by the year 2033, such as the construction of an extra road. The calculations in the A15-project claimed that the MER-measures (if realised by 2033) were ‘enough’ to solve the congestion problems on the A15 and to fulfil legal requirements on environmental standards, but that 3D-measures were necessary for a sustainable A15-region *beyond* legal requirements. Subsequently, the recommendation was to combine MER-measures and 3D-measures and to strive for the scenario in which the sustainability ambitions would go beyond legal requirements¹²⁷.

But what exactly was meant by ‘sustainability beyond legal environmental regulations’? The ‘leverages’ and ‘concrete actions’ that were proposed by the A15-project (see section 5.2.2.) did indeed contain at least one intention that goes beyond current environmental regulations: exploring the harbour region as a large experimental garden for sustainable transport and energy, that can function as a European example. However, the ‘people-aspect’ of sustainability was mostly lacking in the project. Although the attention for environmental health effects and traffic safety can be framed as ‘people-aspects’, the social dimension of sustainability in the sense of equity, wealth distribution or citizen participation, received little to no attention. This was acknowledged in the final deliverable, when discussing sustainability in triple P-terms: “in this project ‘profit’ has been translated - by the participants of this project - in terms of accessibility / traffic flows and planet as fulfilling environmental demands. The ‘people’-aspect has remained relatively under-exposed”¹²⁸. In an interview¹²⁹, the assistant project-leader stated that he intended to include the ‘people’ aspect of sustainability by involving ‘truckers’ (i.e. small transporting businesses) and local politicians that could represent the interests of surrounding inhabitants, but that there was no ‘space’ in the project to do so (to be discussed further in section 5.4. and 5.5.).

Moreover, even though some written texts in the A15-project discussed ‘accessibility, profit and prosperity’ as an integral part of sustainability, in the project meetings that I attended, the word sustainability was used as a synonym for ‘environment’, in *opposition* to accessibility / profit. This was nicely illustrated by a frequently made joke by one of the project-leaders: “the most sustainable harbour would be a harbour without transport, but then it would no longer be a harbour”¹³⁰. Another frequently made joke (by one of the steering group members) was: “if I say that my relationship with my wife is sustainable, this means that there is no passion”, thereby emphasising how ‘un-sexy’ the sustainability concept was. Of course these comments can be put aside as anecdotal incidents or innocent jokes, but one can also argue that such comments illustrated that sustainability was still associated with imposed environmental regulations that poses a threat to facilitating transport. Even though the final report claimed that there had been a ‘shift’ in the project, and that it was realised that sustainability should not be seen as an imposed legal requirement but rather as an opportunity, one can argue that the focus of the

¹²⁷ See Synthesis Report/Deliverable 25, and Final brochure, p. 32 [documents nr. 32 and 31, appendix III]

¹²⁸ Synthesis Report/Deliverable 25, p. 124 [document nr. 31, appendix III]

¹²⁹ Interview nr. 66 [appendix II]

¹³⁰ Fieldnotes [meeting nr. 96, appendix I]

project *in practice* remained on the transport accessibility of the harbour, not on a sustainable region in broader terms. On the other hand, the final deliverable does claim that there has been a genuine shift in thinking, at least on the side of the authors of this report (including the main project leader). Let us consider the following text:

At the beginning of the project it was agreed that accessibility and sustainability would receive equal attention in the research, but soon the priority came to lie on accessibility within the boundaries of environmental conditions. At the end of the project it turned out that this restriction that we imposed on ourselves was unnecessary, because environmental conditions will in the long-term no longer form any problem (see chapter 3). A conclusion that comes forth from the project, is that there is no reason to make sustainability secondary to accessibility, but that a pro-active sustainability policy can be set up to which transport developments can be adapted. (...) De facto, the concept of sustainability has been narrowly worked out in the modelling calculations. (...) [but] the transition trajectories did give explicit attention to the value of sustainability for the Rijnmond region. In the mean time, it is clear that these aspects need to be taken as having equal value and that there is plenty of space to even add a few extra environmental aspects¹³¹.

As such it was presented as a new insight that ‘accessibility’ and ‘sustainability’ did not contradict one another, and that sustainability was not just about legally imposed environmental restrictions. In this sense, the A15-project did, in the end, challenge government and business actors in the A15-region to take up sustainability as an ambition and opportunity, rather than confining it to environmental restrictions that ‘threaten’ the economic position of the harbour.

5.2.5. (How) was transition management applied?

Similarly to many other Transumo-projects, the documents produced in the A15-project were filled with transition terminology. To give a quantitative impression; the final synthesising deliverable, which consisted of 160 pages, used the word ‘transition’ 193 times. The word ‘transition management’, however, was only used five times in this same report. Although word numbers in themselves say little, in this particular case it is representative for an overall observation; the A15-project used transition discourse, but did little with transition management. In this section we discuss three aspects of the relation between the A15-project and transition management; 1) the extent to which TM-elements played a role in the ‘regular trajectory’, 2) observed attitudes towards TM amongst project participants, and 3) the extent to which TM was applied in the ‘alternative trajectory’ / ‘innovation impulse’.

With regard to the regular trajectory of the A15-project, let us start by considering the extent to which the overall approach overlapped with some of the more fundamental, underlying principles of transition management. The first overlap lied in the advocacy for a pro-active attitude by new governance networks and regional coalitions, involving different sectors (business, local government, research) – rather than solely relying on

¹³¹ Synthesis Report/Deliverable 25, pp. 123-124 [document nr. 31 appendix III]

government to solve public sector problems. The second overlap lied in an inter- and transdisciplinary approach, and in a combination of qualitative and quantitative research to identify the problems at hand. The third overlap could be found in the acknowledgement of uncertainty and complexity with regard to future developments¹³², and the resulting recommendation to be prepared for an uncertain future through adaptive strategies that combined 'flexible and dynamic measures', e.g. not to let the accessibility of the harbour entirely depend on the construction of specific infrastructure such as the A4-road, but to experiment with a variety of alternative measures (e.g. road pricing, transport avoidance, mobility management, infrastructure for other modalities, etc).

However, when discussing the approach of the A15-project in more detail, we can observe stark contrasts with the prescriptive TM-approach. The first step in the TM-cycle, 'problem structuring and organizing a multi-actor network', was also the first step in the A15-project. However the way in which this was done, differed significantly from the prescriptive set-up of a 'transition arena'. First, there was the hierarchical and formalised set up of the A15-project, in which participants were from the beginning split up in a steering board, management team, research group (the 'knowledge-workers'), business council, etc. Second, there was the selection of actors in the A15-project; mostly 'usual suspects', ranging from regime-actors in the harbour area to transport experts from research institutes in Delft and Rotterdam. Third, in the A15-project, problem structuring occurred before the project was officially started (based on interviews with several actors in the region and on quantitative studies on traffic and environmental effects). The problem-stating deliverables were already published by the time the official kick-off was held in 2006, thereby fixing the problem statement beforehand. All this differs from a transition arena process, in which exploration of problems and analysis of the system under study, are an explicit starting point of a participatory process. Rather than fixing the problem statement beforehand, a transition arena starts by questioning business-as-usual problem statements, through an intense participatory discussion in which new and different problem perspectives and backgrounds are confronted with each other.

Moving on to the second step in the TM-cycle; 'developing sustainability visions and joint strategies'. The development of an inspiring sustainability vision for the region under study played an inferior role in the A15-project. The focus was on setting goals and conditions for the project, distinguishing between 'accessibility' and 'sustainability' (as elaborately discussed in the previous section). Due to the hierarchical set up, discussions on goal-setting and the role of sustainability were mostly kept to the steering board and hardly open to discussion in the knowledge-workers group. The future scenarios in the A15-project were based on categorizing separately proposed 'measures' and calculating the effects thereof through computer models, which in turn were translated into recommendations on which scenario 'the region should choose', depending on whether it mainly aimed for accessibility, or 'also wanted to achieve more sustainability'. Especially in the external open meetings it remained unclear what the project-participants

¹³² The uncertainties regarding the future are extensively discussed in project deliverables

themselves understood to be a ‘sustainable A15-region’. Besides the innovation-impulse sessions, I witnessed little discussion on what participants saw as a sustainable future for the A15-region. At least, this was the case in the first and second round of the project. In the third round, the project was split up in six working groups, and it appears that each working group formulated future images and joint strategies, all in different ways¹³³.

Interestingly, the final synthesising deliverable presented three ‘transition paths’¹³⁴ - each with a separate ‘transition image’ – for the year 2033. These three ‘transition paths’ were presented as the result of ‘translating and clustering’ the outcomes of the innovation impulse and the six thematic working groups. At the beginning of the report, an ‘inspiring future image’¹³⁵ was presented for sustainable transport in 2033. This future image was described in one and half page at the beginning of the report, and appears to be a summary of the three separate ‘transition images’ presented later on. The future vision was introduced as follows:

What will the A15-corridor look like in 2033? We don’t know that. Especially the question how the economy will develop is surrounded by great uncertainty, and the transport system in the harbor is very sensitive to that. These uncertainties do not take away our duty to think about how it can look like in 2033. That can facilitate the making and adapting of rich scenarios and transition paths, and it can also inspire activities for sustainability transport in the present. Thus, after all, this attempt to formulate an inspiring future image¹³⁶.

The hesitant language in this text (‘we can’t know’- ‘it is uncertain’ – ‘yet it seems useful’ – ‘after all’) illustrates and confirms the doubts that participants and project-leaders had about the usefulness of sustainability visions and transitions images, which I also observed in meetings and conversations. The summarising future image is also presented in the final public brochure, in which it is presented slightly differently:

The future cannot be predicted. Especially economic development, with its strong influence on the mobility system, is surrounded by great uncertainty. Nevertheless, an rousing perspective on how the world might possibly look like in 2033, can inspire activities on sustainable mobility. Within the Transumo A15-project the desired images of stakeholders were used to formulate the first steps on the transition path towards an accessible and sustainable region in 2033. Who knows which elements of the following desired image for 2033 belong to reality?¹³⁷

¹³³ Deliverables 16 – 23 from the A15-project

¹³⁴ In the synthesis report the words ‘transition paths’ and ‘transitions’ are used interchangeably. The three ‘transition paths’ that the final deliverable mentions are; 1) the transition to sustainable traffic- and mobility-management, 2) transition container logistics, modal split and sustainable transport, and 3) transition land-use, economics and transport avoidance.

¹³⁵ Translated from the Dutch term ‘wenkend toekomstperspectief’, literally ‘beckoning future perspective’

¹³⁶ Synthesis Report/Deliverable 25, p. 14 [document nr. 31 appendix III] *translated by F.A.*

¹³⁷ Final brochure [document nr. 32 appendix III]

The way in which the A15-project presented its future image, reminds us of the way in which Transumo formulated its vision on sustainable mobility, i.e. retrospectively and at the end of the program, clustering the outcomes of different projects. Similarly to Transumo, the A15-project could claim, based on its final reports, that it had ‘formulated a future vision on sustainable transport’. However, from a TM-perspective, this sustainability image did not function as a ‘living vision’ that inspired operational activities before and during the process. This leads us to the third step in the TM-cycle, ‘mobilizing actors and executing projects and experiments’. The A15-project being explicitly positioned as an ‘experimental garden’ from the beginning, the mobilization of actors had been given much importance throughout the project. From the set-up of an extensive network of stakeholders in the region, to the coalition-building in separate working groups, and the translation of project results in action points assigned to specific actors, the A15-project was a continuing exercise in the ‘mobilization of actors’. Nevertheless it can be argued that the actual activities mostly remained confined to research, discussion and *intentions* to experiment, rather than the actual execution of the proposed activities. Considering the amount of actors involved and the number of meetings held, it is striking to see that the measurable results consisted primarily of reports, brochures, and plans. Of course, this is not in anyway unique to the A15-project, as it is a rather common phenomenon in short-term project results, especially when it concerns research projects.

With regard to the final step in the TM-cycle – ‘evaluating, learning and monitoring’ – this was inherent in the process of three consecutive project ‘rounds’. After each round, the process and results so far were evaluated, and a new set of activities were started. Of course, a few things remained fixed, the most obvious being the hierarchical constellation of the steering board and management team, and the computer modelling approach as a basis for scenarios and recommendations. However, the alternative trajectory / innovation impulse, and the thematic working groups, were not planned before hand, but incorporated in the ongoing process, in interaction with new actors involved in the project. Moreover, the outcomes of these new activities were integrated with ongoing activities (e.g. computer modelling) and synthesized in final reports.

Leaving the TM-cycle behind, I move on to observed attitudes towards transition management amongst project participants. As mentioned earlier (section 6.1), several participants had a sceptical attitude towards transition management. This was not unique to the A15-project or to Transumo, for I was confronted with this skepticism on several occasions, particularly in the TNO-context. Besides the idealistic character of transition management, people also criticized transition management for a lack of sector-specific knowledge. At the official kick-off meeting of the A15-project, one of the steering boards members, (a transport professor that also worked at TNO), told me that he thought transition management to be ‘all process and no substance’¹³⁸. Most participants in the A15-project positioned themselves as interested, but critical sympathizers of the transition management discourse. This was also illustrated by a scientific article, co-authored by the project-leader, with the following title: *A Renaissance in Understanding*

¹³⁸ Fieldnotes [meeting nr. 29, appendix I]

*Technology Dynamics? The emerging concept of transition management in transportation*¹³⁹. This article discussed transition management in terms of technology dynamics applied in the transport sector, and raised several critical questions. The most important critique related to the generic and ambitious claims of transition management, the supposed lack of sector-specific expertise, the call for a radical new approach without acknowledging past achievements, and the unproven applicability in specific cases. The critique that transition management ‘did not acknowledge past achievements’, did not only relate to past policy efforts to solve problems in the transport sector, but also to previous *research* efforts in the field of technological innovation governance. Several researchers in the A15-project - from the Erasmus University of Rotterdam, TNO, and the Technical University of Delft - had been studying policy challenges related to technological innovation for years, and felt that the radical, ambitious, and general claims of transition management did not sufficiently acknowledge these decades of work.

In this context, it was obviously challenging to ‘integrate’ a transition management approach in the project. Although room was made for an ‘alternative transition trajectory’, this resulted in the ‘innovation impulse’ that only consisted of two sessions. As described earlier (section 6.1.2), this innovation impulse was only *inspired* by transition management, as far as possible given the time constraints. Transition management ideas were especially used for actor selection, in which we strived for:

- *a combination of frontrunners, visionaries, system thinkers and experts, a majority of which had a relative distance from the A15-project*
- *a varied group constellation in which government, research, business, and NGOs were represented*
- *a balance between ‘niche-players’ and ‘regime-players’*

Based on an initial long list of up to forty names and organizations, over twenty individuals were approached to participate in the innovation sessions, of which most agreed to participate in at least one of the two meetings¹⁴⁰. Prior to the sessions most participants were informed about the project and the innovation impulse in a short interview, in which we also collected their perspectives on the harbour region and possible solutions, which we used as input for the sessions. We also tried to apply transition management ideas in the set up of the sessions, especially in terms of creating an informal, open and creative atmosphere. Both sessions took place in an art school located in one of Rotterdam’s most picturesque areas, the rooms were decorated with traffic signs, and colourful posters with controversial quotes from the interviews were

¹³⁹ Document nr. 48 appendix III

¹⁴⁰ The final group constellation included (amongst others); a former director of the Port company, a young entrepreneur in foldable containers, the chair of the *Platform for Sustainable Mobility*, a representative of an regional environmental NGO, a young actor from the rail sector who was active in an innovation-network in public transport, the manager of an governmental innovation program, a journalist, a researcher on sustainable energy, a representative from Transumo’s organizational team and a member of a regional public transport association.

pasted to the wall in order to stimulate discussion¹⁴¹. During the sessions, several participatory methods were used to 'break through' business-as-usual meeting habits. Participants introduced themselves based on an artistic picture and everyone contributed to the creation of a long-term 'timeline' on the wall regarding the A15 region (current situation, expected turning points, future images for 2050). In the second meeting, the session chair applied a method called 'Dancing through Scales', which we carefully prepared beforehand. We distinguished three levels; 1) A15-corridor at the local level, 2) governance at the national and regional level, and 3) global trends at the international level. For each level there was a hypothetical 'assignment'; to come up with a 'daring and seductive proposal' that would convince related actors in charge, i.e. a director of road construction (local level), the Minister of Transport (national/ regional level), and the shareholders of the Port Authority (international level). For each level we selected which participants had most affinity and expertise regarding the topic (based on the interviews and the first session), and during the meeting they worked on their assignment in break-out sessions, subsequently presenting and discussing the plan to/with the entire group¹⁴².

There were many ways in which the innovation impulse differed from the prescriptive transition management approach. This was not only because of time-constraints, but it also had to do with the fact that the professional process-manager hired to facilitate the sessions, was also sceptical about transition management, as he also expressed in an interview¹⁴³. Moreover, in the first session a long-term perspective on sustainability was lacking. The 'Modern Classical package of measures' from the first round was used as a starting point, as participants were asked to come up with 'ideas that were more innovative than these Modern Classical measures', thereby taking the given framework of the project as a starting point. In the second session there was more explicit attention for the long-term and for sustainability, and this produced three sets of measures that clearly went beyond the A15-project. However, the process started in the innovation impulse was not continued. There was no formal follow up, except that the experiences with the innovation impulse, and the subsequent recommendations by the external process-manager, did play a substantive role in the set up of the 'third round' with its six thematic working groups. The process manager of the innovation impulse became the leader of one of these thematic working groups, called 'governance innovation'.

Regardless of the impact that the innovation impulse had on the A15-project, it was consistently framed as a *side activity*. In both open project meetings as well as in several

¹⁴¹ To gain an impression of the atmosphere, see the pictures in the deliverable in which we reported the results of the innovation impulse (Avelino et al. 2008) and the short video compilations, which can be found at: <http://www.qaztion.nl/sfeerimpressie.wmv> and <http://www.qaztion.nl/sfeerimpressie2.wmv>

¹⁴² The presented plans included; 1) a plan to spend the millions - that would normally be invested in road construction - on turning the A15-corridor into a testing ground for technological and spatial innovation, 2) a set up for slot management concessions for regional mobility managers (agreements between national government and business) and 3) a proposal for the Rotterdam harbour as a global leader and instigator of an economy based on bio-fuels and hydrogen.

¹⁴³ Interview nr. 48 [appendix II]

external presentations about the A15-project, the project leaders consistently referred to the innovation impulse as a 'fun initiative organized by young people', for which the seniors in the project 'had made space', and in which they did not get too much involved because they wanted to 'leave it up to the young people'. Even though the innovation impulse was only *inspired* by transition management ideas, it was often referred to as the 'transition trajectory'. Also in the final reports, the words 'alternative trajectory', 'transition trajectory' and 'innovation impulse' are used interchangeably, specified as a process in which 'outside innovators' were invited to discuss 'innovative ideas'. All this indicates how 'transition management' and 'long-term visions on sustainability' were associated with 'creative brainstorm sessions' organized by 'young people', while 'project management' and 'short-term solutions for accessibility problems' remained the core of the 'serious' main trajectory of the A15-project. This image of the innovation impulse had disadvantages but it also had advantages in terms of creating a 'niche' within the A15-project. I come back to this in chapter 8 on transition management.

5.3. POWER IN THE A15-PROJECT

5.3.1. Which resources are mobilized?

Similarly to other Transumo-projects, the A15-project primarily mobilized mental, human and monetary resources, and to a certain extent artifactual resources (e.g. computer models). Overall, the mobilization of artifactual resources mostly occurred at the conceptual level, in terms of researching and comparing different technologies, infrastructures, etc. The core of the A15-project was to collect, evaluate, and communicate information on the A15-region, and to translate and use that knowledge to mobilize actors in the region. Initially, the focus was on research and quantitative data, compared and calculated in computer models. Participants confirmed this in interviews, referring to this characteristic as either as a strength or a weakness of the A15-project¹⁴⁴. Later on however, both in the innovation-impulse and in the thematic working groups, the project included a more qualitative approach, in which more attention was given to the mobilization of people with different perspectives.

As stated earlier, the A15-project presented itself as a testing ground, in which concepts of other Transumo-projects were bundled and applied to the case of the A15-corridor. In that sense, the A15-project aimed to mobilize not only its 'own' mental resources, but also the broader body of knowledge created within Transumo. However, besides a 'scan' that was made of different Transumo-projects, little use was made of the mental and human resources available in Transumo. In the interviews several participants commented that Transumo was primarily a provider of financial resources¹⁴⁵. The A15-project mobilized monetary resources, in the sense that it used Transumo's funding in combination with the funding by participating actors (see tripartite co-financing discussed

¹⁴⁴ Interviews nr. 49, 52-60, 66 [appendix II]. I come back to this more specifically when discussing power relations (section 6.3.4.) and the conditions of power (section 6.3.5).

¹⁴⁵ Interviews nr. 49, 52-60, 66 [appendix II]

in the case-study on Transumo, chapter 4). For the ‘innovation-impulse’, extra financial resources were attained from Transumo.

5.3.2. Which types of power are exercised?

The exercise of *innovative power* in the A15-project was limited. Besides the new GIS-applications developed in the knowledge-worker group, the focus was not on creating or inventing ‘new resources’. This seemed to be a conscious decision, as the project started off with an explicit belief that the challenge was not to come up with new concepts, but rather to develop ways in which concepts that already existed could be combined and implemented. In this sense the project primarily aimed to exercise *transformative power*, i.e. enable the distribution of new resources (technologies, infrastructure) by developing new organizational structures and institutions. We saw this in the extensive attention for coalition-building, regional partnerships, public-private cooperation, etc. When looking at the recommendations and proposals in the final documents (as elaborately discussed in previous sections), the proposed action points can primarily be interpreted in terms of ‘transformative’ power.

On the one hand, it is questionable to what extent the A15-project itself *exercised* transformative power. As far as one can speak of ‘new coalitions’ between the many partners involved in the project, these coalitions did not take concrete shape in new governance structures, economic, or social enterprises. On the other hand, the A15-project did produce an *ideological basis* for other actors to exercise transformative power in the near future, in terms of convincing relevant partners that such transformative power is both desirable and possible. First, it did so by categorising, comparing, and evaluating possible measures (to deal with the problems in the A15-region) and linking these to new governance concepts. Second, it contributed to the shaping of a new paradigm in the harbour region, in which accessibility and sustainability are not seen as contradictory but as mutually enforcing. One can argue that this paradigm is hardly ‘new’, but the point is that it was (believed to be) new to the majority of actors operating in the harbour region.

With regard to *reinforcive power*, it seemed that participants believed this to be ‘lacking’ in the project. In interviews¹⁴⁶, several participants stated that it was a problem that the ‘really powerful actors’ were not involved, primarily referring to national government (RWS / V&W). Nevertheless, the A15-project did exercise quite some reinforcive power in the sense of reproducing hierarchical structures (steering boards, management teams, business councils, etc.), enforcing existing research institutions (TNO, Technical University of Delft), and confirming existing transport paradigms. Despite of its engagement with a new ‘sustainability paradigm’, the A15-project confirmed several ‘old’ paradigms within the transport sector, such as the economic importance of the harbour, the ‘urgency’ of safeguarding accessibility, the need to facilitate growing transport trends, and the necessity to base policy (recommendations) on quantitative scenarios. I come back to this

¹⁴⁶ Interviews nr. 49, 52-60, 66 [appendix II]

in the next section on power dynamics. Before discussing the power dynamics between the project and other actors in the harbour region/ transport system, here I want to focus on the power exercise as observed *within* the A15-project.

In this regard it is striking how reinforcing power was exercised by *individuals* in the project, in the way they represented their respective organizations in the steering board, management team, and knowledge-worker group. There was a strong tendency to emphasize the interests of these organizations. In an interview, a member of the steering board literally emphasized that the participating individuals were “like a mouth through which power spoke”, that everybody “spoke on behalf of their organization, while they were supposed to speak on their own behalf”, and that individuals were “positioned as a representative of a group, as a representative of a power factor”¹⁴⁷. This relates directly to the fierce discussions on ‘accessibility-versus-sustainability’. In the interviews participants especially emphasized the opposition between (the representatives of) the Port Authority and (the representatives of) DCMR, in the steering board and in the management team. The former stressed that the project should be about accessibility, the latter stressed the importance of environmental concerns. Both constituted the paradigms of their ‘home organizations’. In the knowledge-worker group, representatives of different research institutes constituted their different paradigms in terms of each advocating their own computer modelling methods and quantitative studies.

5.3.3. What are the power dynamics?

The power dynamics between the A15-project, the transport sector, and the harbour region, were primarily *synergetic*. The entire set up of the A15-project was designed to enable and enforce the power exercised by dominant actors in the harbour region. One saw this not only in the partners that were represented in the steering board and management team, but also in the project’s discourse and chosen approach. This discourse was consciously adapted to the discourse of the Port authority and other companies in the harbour region. Problem-statements were based on interviews with these actors, and MER-studies were used as an explicit starting point for many of the project’s activities. The choice for the year 2033, taken as the future reference point in the scenarios and ‘inspiring future image’, comes directly from these MER-studies. In most of the meetings I attended, the opinions and interests of ‘the Port Authority’ and ‘the companies in the region’ were taken as the main reference point.

The question is, what *kind* of power did the project enable by seeking such ‘synergy’? On the one hand, the project motivated and enabled dominant actors in the A15-region to exercise *transformative* power, in terms of ‘convincing’ them to invest in alternative modalities, set up new governance structures, and embed the sustainability concept in ‘harbour transport discourse’. On the other hand, the project enforced the *reinforcing* power of existing harbour- and transport-structures, not only by providing a platform for dominant actors to voice their vested interests, but also by going along with their

¹⁴⁷ Interview nr. 56 [appendix II]

prevailing discourse. The concept of sustainability was adapted to ‘fit’ in the prevailing discourse on transport growth and harbour business, not the other way around. By ‘adding’ sustainability language ‘on top’ of this prevailing discourse, its position is strengthened in terms of societal acceptance, without any fundamental change to its underlying dispositions (e.g. ‘remaining one of the largest harbours’).

Moreover, the A15-project also contributed to the reproduction of existing institutions and paradigms at a broader societal level. The main messages and proposals that came out of the A15-project (as presented in the final documents), fitted in with prevailing neo-liberal trends involving new public management, privatization, and environmental policies based on market principles. By emphasising that the transition to sustainable transport requires both ‘stimulation and force’, both ‘techware and orgware’, by basing its recommendations on quantitative data and scenarios calculated in computer models, and by proposing numerous public-private platforms that combine technological and organizational expertise, the A15-project reproduced and confirmed a prevailing technocratic approach to sustainable development.

Above all, the A15-project aimed to strengthen the collective, *systemic power* exercised in the harbour transport system. We saw this in the proposed measures and in the way in which these were directed at ‘the region’ as a collective actor, emphasising the need for ‘Rotterdam connectedness’¹⁴⁸. Interestingly, the theme of power dynamics was explicitly addressed in the final synthesis report, in which organizational fragmentation and partial interests were emphasized as the main problem. In the final chapter, which addressed the contribution of the A15-project to ‘Transumo’s footprint’, the authors listed a few concluding observations, including the following:

(...) inherent to a broad consortium, is the phenomenon that several actors actually *profit from suboptimization*, and hence have no interest in the change (i.e. improvement) of current structures. (...) power relations have emerged that primarily constitute the current situation. In the project, situations were identified that actually demand a redesign of the supply chain, because transport can be faster, more efficient and cheaper. But still this does not happen because the existing power relations lead to inertia and / or because nobody is capable of rising above partial interests in the supply chain. The abovementioned situation leads to the danger that *existing interests and short-term agendas* determine the outcome of activities and results (...)¹⁴⁹.

These comments suggest that the restriction of transformative power was primarily associated with the *partial* exercise of reinforcing power. Actors that profit from suboptimal and short-term interests were seen as hampering ‘change’ or ‘improvement’ of existing structures. In this reasoning there was an implicit assumption that if the different exercises of reinforcing power were to be ‘integrated’ at a systemic level, this would enable system transformation and improvement, as actors would come to see that

¹⁴⁸ Synthesis Report/ Deliverable 25, p. 126 [documents nr. 31 appendix III]

¹⁴⁹ Synthesis Report/ Deliverable 25, pp. 121-122 [documents nr. 31 appendix III] emphasis added.

such change would be ‘in everyone’s interest in the long-term’. Based on this assumption, it makes sense that project primarily aimed for synergetic power dynamics.

Antagonistic power dynamics seemed to be consciously and explicitly avoided. Although both project-leaders and several participants expressed their regret and criticism with regard to the somewhat restricting views of the Port company and other business actors, they adapted the project to it, as they saw it as their explicit duty to gain the support of the Port community and business community in the harbour region. The final report did claim that “the A15-project teaches us that ‘being the largest’ is not the highest goal one should strive for” and that “in a long-term agenda, it is more meaningful to ‘be the best’ and fully integrate sustainability”¹⁵⁰. Also, the report made the following critical remark:

(...) [regarding] the theme of ‘transport avoidance’, on the one hand it is said within the Port Authority that it is important to take as much transport off the road as possible, while simultaneously the principles of transport avoidance are questioned because it can contradict the interests of a dynamic harbour¹⁵¹.

These comments suggest awareness about the conflict between sustainability measures (e.g. transport avoidance) and harbour interests, and about the tension between ‘being the largest’ (i.e. accessible) and ‘being the best’ (i.e. sustainable). These conflicts and tensions, however, were not the basis of the A15-project. The proclaimed urgency of the Rotterdam harbour *facilitating* a tripling transport growth (i.e. being and remaining ‘one of the largest’) was not questioned, on the contrary, it was confirmed (as elaborately discussed in section 5.2.4.). As far as the project did advocate sustainability and transformation in its final recommendations, it explicitly framed this as something that did *not* contradict but rather would *strengthen* the economic growth of the harbour.

5.3.4. Which power relations can be distinguished?

Having discussed the synergetic relationship between the A15-project and the ‘harbour regime’, we now turn to discuss other power relations, between the A15-project and other, similar projects and organizations, and within the internal group dynamics. Some of the power relations have already been alluded to in earlier sections, and it must be clear by now that there were various discussions and disagreements within the steering board, management team, and knowledge-worker group on several issues, ranging from goal-setting to process models and computer modelling methods. This section aims to discuss these tensions more explicitly in terms of the typology of power relations as presented in chapter 3. To start with internal power relations, several participants mentioned the strong position of the Port authority. Especially those who were indirectly involved in the project (i.e. in the innovation impulse and / or open meetings) were of the opinion that the Port authority was (too) dominant¹⁵². One representative of an environmental organization (who participated in the external meetings) commented that the A15-project

¹⁵⁰ Synthesis Report/ Deliverable 25, p. 126 [documents nr.31 appendix III]

¹⁵¹ Synthesis Report/ Deliverable 25, pp. 121-122 [documents nr. 31 appendix III]

¹⁵² Interviews nr. 49, 52-60, 66 [appendix II]

was “a toy’ of the Port authority”¹⁵³. In an interview, a participant in the innovation-impulse described the position and attitude of the Port Authority as follows:

Based on my impressions I would say that the Port authority is a very powerful player, they can afford to just ‘sit by’ in the project and once in a while grumble reluctantly. Nobody dares to really attack them. [The former director of the Port company in the steering group] is not a bad guy, but you can see that he is used to the Port company having the last word. You also always see that with ‘the Shells’ and the likes... they can afford to not be constructive. The companies in the project are small ones, not the very strong ones. No Shells, BPs, aluminium smelting-works, and so on. The risk thereof is that one develops good ideas that are subsequently confronted with the final judgment of the Port authority. That can be killing for the other partners. In fact they do not at all decide together. The government should have a much stronger position. DCMR has a little Calimero-power; people don’t really take them seriously. The government is a little invisible in the project. The power of the partners is determined by the people who represent them. In the real world the Port authority sits around the table with municipalities and the like, and then the power relations are more balanced. In the real world the situation is more balanced¹⁵⁴.

Even though this is only the opinion of a relative outsider to the project, it does point to an essential element of the power relations in the A15-project, as also observed in meetings and overall project discourse. Even though representatives of different organizations formally had an ‘equal voice’ in the meetings, the representatives of the Port authority could afford to take a so-called passive aggressive attitude, in the sense that the project depended heavily on their participation, significantly more than on the participation of the other main partners. A member of the management team described how the representative of the Port authority once threatened that ‘if the process would continue in this direction¹⁵⁵ it would no longer be interesting for the Port authority’¹⁵⁶. Another member of the management team also confirmed that ‘certain parties threatened to leave the project’, and that they exercised a significant amount of power by doing so.

The companies represented in the business council were relatively ‘small’ players, thereby not ‘powerful enough’ to ‘counter balance’ the dominance of the Port authority, yet, at the same time, they could afford to also have a ‘passive aggressive’ attitude towards the A15-project, simply because they provided the ground on the basis of which the A15-project could claim that they involved ‘the business community in the region’. Even though the project-leader emphasized that the project did not depend on the financial support of these companies¹⁵⁷, he did on another occasion stress that it would be a ‘disaster’ for the project if companies would withdraw their support (in terms of prestige

¹⁵³ Fieldnotes, informal conversation

¹⁵⁴ Interview nr. 54, appendix II

¹⁵⁵ ‘This direction’ referred to the innovation impulse & recommendations of the external process manager

¹⁵⁶ Interview nr. 52 [appendix II]

¹⁵⁷ Interview nr. 52 [appendix II]

and mobilizing potential). All this indicates a situation of *one-sided dependence*; the A15-project depended significantly more on the Port authority and other companies than the other way around. For the Port authority and the companies, there was not much too loose; the potential outcomes of the A15-project were primarily ‘a nice unforeseen circumstance’¹⁵⁸. A member of the steering board characterized this attitude of the Port company as follows: “all those things that Transumo can provide for a nickel and a dime... 20 intellectuals working for them... why not?”¹⁵⁹.

These attitudes obviously impacted the internal group dynamics. In interviews, several claimed that the different participants were ‘well matched’¹⁶⁰ in discussions. However, having an ‘equal voice’ during meeting discussions does not necessarily reflect the underlying power relations. This especially concerned the position of (the representatives of) DCMR. The DCMR-representatives were the main actors to advocate more attention for sustainability and long-term perspectives, and responsible for the thematic working group on transport avoidance. Although participants claimed that DCMR and the Port authority could ‘match each other’, it often seemed that the opinions expressed by DCMR were not taken very seriously, at least much less seriously than the opinions of the Port authority and other company representatives. Illustrative in this regards was an incident at the meeting of the ‘business council’¹⁶¹. While DCMR had been invited to the meeting, the representative was not present. At the reception following the meeting, a business representative loudly and publicly commented on the absence, concluding that it was good because; “at least this way we keep it pleasant”¹⁶² (everybody laughed).

According to a member of the management team, the project was primarily dominated by ‘the Rotterdam partners’ (including the Port company, DCMR, Deltalinqs, and Stadsregio), and in comparison to this ‘Rotterdam front’, the project-leaders representing the research institutes (TNO and EUR) had a relative weak position, and did not ‘develop sufficient knowledge to provide counterbalance’¹⁶³. Moreover, interviews indicated that there was also tension between EUR and TNO. The TNO project-leader explained that the professor who represented TNO in the steering-group had different opinions than his direct boss, who demanded concrete contracts and results (including the application of a specific computer model), which lead to conflict with the EUR project-leader.

Despite of all these tensions, conflicts and one-sided dependencies, there still seemed to be an overall situation of *mutual dependence, co-existence and cooperation*. For there was a relatively clear task-division between the different partners, project-leaders and groups (steering board, management team and knowledge workers), and even though the success of the project did not seem as important to everyone, they did all ‘need each other’ to make the project work. Differing preferences and priorities lead to conflictive

¹⁵⁸ Translation from the Dutch expression “mooi meegenomen”

¹⁵⁹ Interview nr. 56 [appendix II]

¹⁶⁰ Translation from the Dutch expression “aan elkaar gewaagd zijn”

¹⁶¹ Fieldnotes [meeting nr. 42, appendix I]

¹⁶² Translation from the Dutch expression “zo houden we het tenminste gezellig”

¹⁶³ Interview nr. 66 [appendix II]

situations but were in the end ‘solved’, either through middle-way concessions, or through parallel trajectories and several thematic groups, in which different project-leaders and participants could focus on what they found to be the most important themes and most appropriate methods.

The internal tensions in the project to a large extent reflected broader conflicts, for instance between different research institutes. This does not only relate to the relation between EUR and TNO, but also involves the Technical University of Delft, and even internal tensions between different departments *within* these institutes. The EUR project-leader, for instance, initially worked at the department of Erasmus Centre for Sustainability Management (ESM), at the faculty of social sciences at the EUR. It so happens that ESM was in the process of being ‘shrunk’ (and eventually abolished), which coincided with the foundation of the Dutch Research Institute for Transitions (DRIFT). It was only years after I first got involved with the A15-project, that I came to understand that various people partly ‘blamed’ the arrival of DRIFT for the shrinking / abolishment of ESM, as the former in a way ‘replaced’ the latter. In 2008 the project-leaders told me that he was skeptical about the long-term viability of DRIFT, not because he doubted the added value of transition management but because the ‘success’ of DRIFT reminded him of the success that ESM previously had, which turned out to be of a temporary nature¹⁶⁴. TNO and the Technical University of Delft (TU Delft) also contained (new) research departments revolving around transition (management) studies, and based on several conversations with people from TNO and TU Delft, I had the impression that there was a widespread skepticism towards these new ‘transition groups’. Most participants in the A15-project were not part of these transition-oriented departments, which partly explains their skepticism towards transition management (see also section 5.2.5.). However, the tension between different research institutes and departments seemed to mostly result in a situation of *co-existence* (rather than flat out competition).

The same can be said about the external relations that the A15-project had with other organizations and projects. Interesting in this regard was the relation between the A15-project and the Rotterdam Climate Initiative (RCI), or rather, the lack thereof. Several participants mentioned that there was no link between the two initiatives¹⁶⁵. As this seemed particularly strange to me – as both RCI and A15-project supposedly dealt with sustainability in the harbour region, and both had Deltalinqs as a crucial partner – I made an effort to interview and invite a RCI-representative to the sessions of our ‘innovation impulse’. This attempt failed, and participants of the A15-project indicated that it was a conscious decision of the Port Authority to explicitly keep the two projects separate. In the final report of the A15-project, RCI is described as one of those ‘developments-in-a-changing-context’ that occurred while the A15-project was proceeding:

(...) many ideas that were mentioned as promising and of high potential at the beginning of the project, were surpassed and over taken by current events (...) during the runtime of the project, new agenda points emerged. Here one can especially think of the Rotterdam

¹⁶⁴ Fieldnotes [informal conversation]

¹⁶⁵ Interviews nr. 49, 52-60, 66 [appendix II]

Climate Initiative. The goal-setting of RCI is fifty percent less CO₂ in 2025 compared to 1990, preparation for climate change and strengthening of the Rotterdam economy. (...) the high amount of initiatives [on sustainability] has invited us to clearly indicate what we can contribute to what already happens elsewhere. This has, for instance, led to the fact that CO₂-reduction has received a less prominent position in the project, because this is already managed by RCI¹⁶⁶.

This text, suggests a *partial* 'task-division' approach; some developments were directly relevant for the project and integrated in the proposals (e.g. computer modelling studies), while other issues that were already taken up by other initiatives, were given less attention in the A15-project (e.g. RCI's CO₂). The ambition to 'bundle' concepts from elsewhere and experiment with these in the A15-region, was primarily about 1) integrating studies that were already done by the main partners involved (Port Authority, DCMR, TNO, EUR etc), 2) applying these to the challenges on the A15-corridor, and 3) connecting the resulting scenarios to ongoing transport developments in the harbour region. Meanwhile, the relation with other initiatives that explicitly aimed for sustainability in the harbour region/the freight transport sector was mostly one of *co-existence*. This was not only reflected by the relation with RCI, but also in the relation with the innovation program *Sustainable Logistics* (see chapter 6), which did not go beyond representatives of that program being invited to external meetings of the A15-project. The cooperation with other Transumo-projects was also minimal. Even though there was a link with the *Rush Hour Avoidance* project (see chapter 4), this was mostly based on direct relations that representatives of the *Rush Hour Avoidance* project sought with the Port Authority and other partners in the region, not so much on cooperation with the A15-project¹⁶⁷. Besides the Transumo-meetings attended by the EUR project-leader¹⁶⁸, there was no explicit, concrete cooperation with other Transumo-projects. I come back to the relation between Transumo and the A15-project when discussing empowerment.

5.4. EMPOWERMENT IN THE A15-PROJECT

5.4.1. How and to what extent are the conditions of power met?

The access to resources in the A15-project seemed good, above average even, compared to other Transumo-projects. The project drew on a large amount of partners, financial sources, expert individuals, studies, information, concepts, computer modelling methods, and so on. Also, the skills and strategies applied to mobilize these resources seemed above average. The most evident manifestation thereof was observed in the way the outcomes were communicated and visualised in shiny brochures filled with pictures and geographical maps of the harbour region. The final brochure even included an interactive DVD with video-presentations, describing the outcomes of the project. The only other

¹⁶⁶ Synthesis Report/Deliverable 25, pp. 22,122-123 [document nr. 31 appendix III]

¹⁶⁷ Interview nr. 59 [appendix II]

¹⁶⁸ Ranging from meetings of the thematic cluster 'governance processes' to broader Transumo meetings, such as the 'transition acceleration sessions' as discussed in chapter 4. The EUR project-leader gave various presentations about the A15-project at such meetings.

Transumo-project that matched the A15-project in this regard concerned the *Rush Hour Avoidance* project. Both distinguished themselves from other Transumo projects in terms of having a strong individual project-identity, with their own websites, home styles, logos, conferences, and broad external networks. Interestingly, both projects were referred to as the most successful project ('the pearls') at Transumo's closing festival.

Nevertheless, several participants complained about *lacking* skills and strategies in the A15-project. This ranged from critical remarks on project management, to regrets that there was too little lobbying and political activism, to an overall opinion that the project was too much about research and producing reports, and therefore not inspiring or mobilizing enough¹⁶⁹. A governmental representative once commented that 'yet again' it showed that Transumo-projects were nothing but 'a hobby for professors', referring to the academic and dry tone of the presentations and discussions¹⁷⁰. Representatives of Deltalinqs¹⁷¹ also complained about this scientific orientation:

[representative 1] The dry numbers of science are not 'tested in practical reality'. How is it possible that according to traffic scientists there is hardly a problem, while most companies have the perception that traffic is stuck from morning to evening? From the perspective of traffic science there is no problem... But in practice we are stuck in traffic jams.

[representative 2] The knowledge dissemination between science and business can be further improved... Use is made of models that are based on theoretical assumptions, which in turn are based on a national average. The A15 is not a national average. I wonder whether such discussions take place. There are no company representatives participating in the knowledge-worker meetings.

Based on my participant observations, I can assure that such discussions (e.g. which averages to use as data input for the traffic models), did certainly take place in the knowledge-worker meetings. The fact that company-representatives did not participate in this was probably a good thing, as these meetings were particularly technical, and would probably have aggravated the negative associations with 'science'. Nevertheless, because the knowledge-worker group was kept separate, other participants could not fully understand what 'was taking so long'. There was an explicit and recurring complaint from company representatives that the project activities were 'taking far too long'. Business representatives argued that accessibility was an obvious and urgent problem, that the A15-project had to provide short-term solutions and to convince governmental actors to

¹⁶⁹ Interviews nr. 49, 52-60, 66 [appendix II]

¹⁷⁰ Fieldnotes, informal conversation. This comment on 'hobby for professors' was also mentioned in the case-study on Transumo. Although it was uttered by the same individual, it was repeated on several occasions, both in reference to the A15-project specifically as well to Transumo more generally. This is why I repeat the comment in both case-studies.

¹⁷¹ Interviews nr. 59 and 60 [appendix II]. Interestingly, the interview with Deltalinqs was with two representatives, one of which had a business card with 'accessibility' and the other with 'sustainability'. Both of them participated in the A15-project (management team), first the sustainability-representative, later on the accessibility-representative...

implement these as soon as possible. Most partners involved in the project seemed to acknowledge the value of research, but expected more to be done with it:

(...) science has an incredible amount of power. The power is there, the question is how you use it, how you exploit it. For that you need enthusiasm and passion. That is the power of the word; fiction, creativity... Compared to that, the power of Shell is nothing, that is business as usual, nothing new¹⁷².

A representative of Deltalinqs argued that the preliminary project results should be used to ‘mobilize politicians and V&W’, and that ‘it is better to already involve politics *now*, start *now* with lobbying and agenda-setting’. He also mentioned that ‘we wanted V&W on board but they did not want to participate’¹⁷³. In this regard, there seemed to be one particular ‘condition of power’ lacking in the project (according to the participants); the lacking involvement of national government. In terms of the power framework presented in chapter 4, there was a lack of a particular *strategy* (i.e. political lobbying), and lack of a *human resource* (i.e. governmental actor) with the necessary *skills* to integrate the outcomes of the A15-project in political circles¹⁷⁴.

5.4.2. What is the level of intrinsic motivation?

There was a relatively high intrinsic motivation among participants to make the A15-project succeed. Participants seemed to share an intrinsic curiosity, fascination, and passion for the Rotterdam harbour and the theme of freight transport, and a strong willingness to mobilize actors and build coalitions in this region. Extrinsic motivation however also played an important role, in the sense that there was a strong focus on satisfying external expectations. The Port authority and business community demanded attention for accessibility, DCMR and Transumo demanded attention for sustainability, while researchers demanded attention for their own models. A large amount of energy and time was invested in meeting all these external expectations, keeping everyone involved and satisfied. In interviews and conversations, project-leaders and participants emphasized that “the method is that you take care that everybody gets a bit of what they want (...) place yourself in the middle, facilitate both simultaneously”¹⁷⁵.

The project was explicitly designed to have impact ‘on the region’. The *sense of impact* mostly depended on the large amount of partners that were involved in the project, and the expectations that these partners would take up the outcomes and recommendations of the project. The fact that some important partners were not involved, (e.g. V&W and large production companies), was often mentioned as a threat to the project’s impact.

¹⁷² Interview nr. 56 [appendix II]

¹⁷³ Interviews nr. 59 and 60 [appendix II]

¹⁷⁴ It must be mentioned that this analysis is based on participant observations and interviews that took place two years before the project ended. In order to know the extent to which partners are more (or less) satisfied about the strategies and skills at the end of the project, it would be necessary to interview them again, retrospectively.

¹⁷⁵ Interview nr. 59 [appendix II]

Regarding sustainability transitions, participants were humble and sceptical about their impact. Whenever the theme of sustainability transitions came up, the main project-leader often emphasized that “we cannot save the world”¹⁷⁶. Moreover, he stressed that; “transport is not a thing in itself... it is determined by greater forces that go beyond it... like the energy transition... that is a great force that will affect the transport sector, but transport in itself can never realise a transition”¹⁷⁷. This was confirmed by the comments of one of the steering-board members; “an organization like the Port authority only has restrictive power... they can only forbid things... Not positively influence, but negatively. That also applies to the government. The real power lies in the positive... (...) in production” (i.e. impact lies with production companies, not the transport sector)¹⁷⁸.

Regarding a *sense of meaning*, it seemed that the concepts of a ‘dynamic harbour’ and ‘efficient transport system’ provided more meaning than the concepts of transitions and sustainability. I already elaborately discussed how participants struggled with the meaning of sustainability. It seemed that it was especially difficult to integrate the meaning of a dynamic harbour with the meaning of sustainability. On several occasions, outside participants commented that the A15-project lacked an ‘inspiring future vision’. A member of the steering-board also emphasized this during a project meeting in which the results of the ‘second round’ were presented:

I’m looking for an idea that I don’t understand, but that I can believe in! Let it flourish! That is possible... look at what is hanging there [posters on the walls]... some are in colour... but it is still flat... I want to be captured by it... what is needed for that?... passion!...(...) you guys have to take this material and make it into a mobilizing perspective¹⁷⁹.

To a certain extent, the second session of the innovation impulse provided such passion and inspiring future image. Most participants emphasized how inspiring the session had been. However, this mostly remained within this one group session. As a steering-board member - who also participated in the session - said afterwards:

I had hoped that [the future perspectives of the innovation impulse] would be presented with suspense (...) If you want to give more meaning to these three perspective you need to give more passion... In the end it became a mediocre concession after all¹⁸⁰. I had such high hopes... [but] the passion and the creativity are missing. You want these three products to be presented with fervor and passion. The more passionate someone is the better... I wish that we would have three people that could present it... There was a special atmosphere [in the second session of the innovation impulse]: you could have used and augmented that¹⁸¹.

¹⁷⁶ Fieldnotes [several A15-meetings, appendix I]

¹⁷⁷ Fieldnotes [meeting nr. 96, appendix I]

¹⁷⁸ Interview nr. 56 [appendix II]

¹⁷⁹ Fieldnotes [meeting nr. 95, appendix I]

¹⁸⁰ Translation from the Dutch expression “het is toch veel geprakt eten geworden”

¹⁸¹ Interview nr. 56 [appendix II]

It is questionable to what extent this longing for ‘more passion’ – and the desire to continue with the outcomes of the innovation impulse – was shared by other participants. It seemed that most participants received their sense of meaning and impact from producing ‘concrete’ and ‘hard’ facts regarding freight transport, rather than discussing desirable visions for the region. The outcomes of the innovation-impulse were unsuitable to be calculated in computer models. As one participant formulated it: “the innovation-impulse is too vague for Urban Strategy [a computer model]... it is mostly about ideas and visions”¹⁸². Moreover, by the time the innovation-impulse had been finalized, the ‘third round’ of the project was started, in which the explicit aim was to go beyond ‘theoretical exercises’ and to take a more practical approach in thematic working groups. Each working group was to construct its own sense of meaning and impact.

It can be argued that the fragmentation of the project – parallel trajectories, separate working groups – took away the need to have a *common* sense of meaning and impact. This did provide participants with a sense of choice – everybody could ‘do their thing’ – but there was a low sense of choice regarding the project as a whole. This mostly relates to the hierarchical set-up; discussions on goal-setting were mostly kept to the steering board, process design was primarily determined by the management team, and research approach was decided in the knowledge-worker group. As such every group felt that there were important elements in the projects that they had no decisive influence on. Moreover, even *within* the different groups the sense of choice was limited, not only because there was always an opposing view to one’s own, but also because many issues had already been predetermined. In an interview, a member of the management team emphasized that when he became involved in the project, ‘everything was already ready to go’, that he would have done many things differently if he could have, but there was not space to do so¹⁸³. Moreover, there was an inherent ‘lack of choice’ in the quantitative research approach, which relied on existing data that significantly predetermined the expected trends and reference points used for the scenarios and recommendations.

Regarding a sense of competence, most participants seemed to be quite self-secure regarding their own competences, ranging from transport expertise and research skills to networking, coalition-building, and process management. On the other hand, in interviews participants criticized each other’s lack of competences. A striking observation concerned the comments participants made regarding transition management and the innovation-impulse. Therein it was continuously suggested that the main participants in the A15-project were not capable of thinking innovatively or long-term, and that therefore it was necessary to involve ‘outsiders’ to do this:

when you live in discussions over the second ‘Maasvlakte’ and the accessibility of the harbour, it is hard to take distance from that and look at the long-term in a more innovative way. That is why we needed people from outside with other foci (spatial,

¹⁸² Interview nr. 58 [appendix II]

¹⁸³ Interview nr. 66 [appendix II]

economic, environment, climate, etc (...) transitions are about fundamental changes, and that is not something everyone gets. You have to be aware of that¹⁸⁴.

In the meetings that we had to discuss the set up of a 'parallel transition trajectory', the project-leaders often jokingly referred to themselves and other participants as 'middle-aged men stuck in old paradigms' and that therefore it was necessary to allow the 'young' participants to organize a parallel transition trajectory with innovative outsiders. These comments were partly caused by the ideas of transition management, which emphasize the need to involve 'frontrunners', 'visionaries' and 'innovative thinkers'. I often felt that this attitude towards a 'parallel transition trajectory' took away the incentive for other participants to strive for a more innovative and long-term perspective *within* the regular project. It suggested that the 'regular participants' were 'too conservative'; rather than challenging them, a self-fulfilling prophecy occurred, in which participants were given the impression that they were not innovative or risk-taking enough, and therefore they would also not act like it.

Transition discourse, as expressed by Transumo and myself, did not seem to provide a higher sense of impact, meaning, choice, or competence. As already discussed in chapter 4 on Transumo, many project participants found the transition terminology difficult to understand (vague, theoretical, abstract, overly ideological, etc.). During a presentation given at a conference in 2008, one participant of the A15-project said: "after a few years I sort of understand what transition is"¹⁸⁵. Another participant said, in an interview:

[question: what is the role of transition (management) concepts in the A15-project and how are they applied?]. First they were not applied. Afterwards they were artificially applied, in the sense of 'we have to do something with it because it is a Transumo-project'... half way last year there was a first attempt to do something with it, to use more of it than the mere terminology (...) we sold this [innovation impulse] under the title of transition management, because that means more money. The same type of session [referring to innovation-impulse sessions] could also have been organized on the basis of insights from process management (...)

[question: why were the two trajectories decoupled?]. People were afraid that it would fail. To put it in transition management terms: they wanted to keep it in the niche. People were also afraid that current partners would lose their role, they wanted to keep the existing participants involved¹⁸⁶.

Similarly to other Transumo-projects, transition (management) concepts seemed to be primarily used because this was expected and required by Transumo, not because (most of) the participants really cared about the meaning of these concepts. One can argue that this points to *extrinsic motivation*, i.e. doing something because of the supervision and rewards mediated by others. On the other hand, it has to be acknowledged that the project-leaders managed to find a delicate balance in the use of transition (management) concepts, by doing this through a 'parallel transition trajectory', while continuing with the

¹⁸⁴ Interview nr. 55 [appendix II]

¹⁸⁵ Fieldnotes [meeting nr. 115, appendix I]

¹⁸⁶ Interview nr. 59 [appendix II]

regular trajectory based on their (and other participants') judgments and preferred approach. This can be characterized in terms of *intrinsic motivation*, in the sense of smart strategic behaviour to achieve intrinsically motivated goals. Without allowing the regular trajectory to be 'disturbed' by imposed transition (management) concepts, the A15-project managed to *use* transition discourse to gain additional financial resources, to organize additional activities, to involve more partners, and to formulate the project results in sustainability terms.

5.4.3. Which interpretative styles prevail?

As discussed in chapter 3, intrinsic motivation depends on positive task assessments, which in turn depend on individuals' interpretative styles; the way in which they attribute cause and effect, evaluate success and failure, and envision future events (and their own role therein). Obviously such interpretative styles differ for each individual, but a few observations can be made about the interpretative styles that seemed to prevail within the A15-project. The first and most obvious one concerns the interpretative style inherent to traffic models and scenarios based on quantitative data. In the A15-project, these computer models and quantitative were *literally* used to attribute cause and effect, to evaluate success and failure, and to envision future events (i.e. problem analysis of the A15-region, evaluating the effects of the proposed measures, calculated scenarios for 2033, and subsequent policy recommendations).

However, the project also aimed to go beyond this scientific and quantitative approach. Many participants stressed that the project would only be 'successful' if the proposed measures would be taken up by broad coalitions in the region. In the final phase of the project the need for more participatory discussion and 'inspiring future image' was acknowledged, integrated in the process, and addressed in the final documents. The external process-manager played an important role and based himself on a more *constructivist* approach to the challenges in the A15-region. One can argue that the A15-project combined different interpretative styles, ranging from 'hard' positivistic transport science to 'soft' constructivist process insights. The common factor between these two interpretative styles was a sceptical attitude towards 'social engineering' and 'grand design' (associated with sustainability transitions). The 'realities' of the A15-region – be it transport trends or stakeholder views – were taken as a starting point, and the imposition of a 'sustainability vision' was avoided.

Regarding the envisioning of future events, it was striking to notice the way in which participants spoke about 'long-versus-short-term'. When asked to define what 'long-term' or 'short-term' meant, participants gave strikingly different answers¹⁸⁷. Interpretations of the short term varied from 'today', 'tomorrow', 'the next four years', 'until the end of this project', 2010, 2015, or even 2020, while interpretations of the long term varied from 2010, 2015, 2020, to 2030 and 2050. Some saw 2020 as clearly long-term while others did not at all, as illustrated in the comment that "the possibilities for new visions lay beyond

¹⁸⁷ Interviews nr. 49, 52-60, 66 [appendix II]

2020 and no transition can be achieved before that, because too much is already fixed until 2020". Participants also commented on the interpretations of others, such as "the long term vision of the ministry is about 2020, but that is actually too short-term because real change can only happen after that". The one thing that all participants agreed on was that 'the tension between the short and the long term' was one of the major challenges in the project (Avelino & Bressers 2008).

The most striking observation was that in the interviews, participants separated each other into 'those that think short-term' and 'those that think long term'. Especially business companies were mentioned by many other participants as the ones that 'think short term' or 'only care about today and tomorrow'. While most participants emphasized that this short-term thinking was a problem, they did not so much blame companies for it, as this short-term thinking was believed to be 'inherent' to business. References were made to the short-term demands of shareholders (in the case of large companies), the highly competitive market, and the small profit margins in the transport sector (in the case of smaller companies). Business "cannot afford to think long-term". During an external project-meeting, two business representatives confirmed this view:

[business representative 1]: my motivation [for this project] is decreasing. I got involved in this project with a lot of enthusiasm... but we have shareholders, they don't think long-term, but short-term. It's all very nice what hangs here [points to posters on wall] but there is not really a spark.

[business representative 2]: it is hard to operate on the long-term... we are focused on every day problems. We have more then 60 trucks driving, and those are often stuck in traffic...¹⁸⁸

Even though all participants seemed to agree that considerable tensions and dilemmas in the project lied between a short-term versus long-term focus, they had different ideas on what the words 'short-term' or 'long-term' entailed in terms of actual dates on the calendar. This suggests that the perceived tension 'between the short- and long-term' might have been about something else. For instance, the 'long-term' was also associated with a slow process in the project. Stakeholders and outsiders – mostly companies – complained about project outcomes 'taking too long'. Insiders tended to conclude that this meant that those critics were too impatient to think long-term. There is however a difference between a long-term *substance* focus (e.g. how could the harbour develop during the next 30 years?), and a slow *process* within the project (e.g. what are we doing in the project in the coming weeks?). One of the reasons that the long-term was associated with a delay in the progress of the project, had to do with the focus on quantitative research outcomes and traffic models, in which the long-term effects of the 'solutions' were 'calculated' in scenarios. By many this was considered to be the core output of the project, the 'concrete', 'objective' and 'scientific' results. Other outcomes such as visions and strategies were considered 'creative' and 'fun' but also 'vague' and 'normative'. The parallel trajectories and the respective 'deliverables' seemed to enforce

¹⁸⁸ Fieldnotes [meeting nr. 91, appendix I]

this interpretation, and also confirmed the idea that a long-term focus leads to vague outcomes that cannot be translated in to concrete project results (i.e. calculated in scenario models), while a short-term focus safeguards a successful project output. Ironically, however, the deliverable that was quantifiable ‘still had to be calculated’, whereas the deliverable that was not quantifiable was basically ‘ready to be used’.

5.4.4. To what extent is there a culture of empowerment?

The A15-project involved several aspects of an organizational ‘empowerment culture’ (see chapter 3, section 3.3.2). Especially the set up of the second and third round (parallel trajectories and thematic working groups), was based on self-directed teams who ‘owned their own job’ and based activities on their own ‘good judgment’. Nevertheless, the project also included many aspects of a hierarchical culture. Most evident in this regard were the pyramid structure (steering board, management team vs. knowledge-workers), and the focus on planning (deadlines, deliverables, products). Especially the relation with Transumo seemed to be based on individual responsiveness (by the project-leaders), rather than team-responsibility. In interviews, it was striking to notice how little participants knew about Transumo. They mostly associated Transumo with financial resources and administrative hassle:

[member management-team]: in the beginning the embedment in Transumo was not so good. Now it is better. There are all these conferences where [the project leader] takes the floor (...) Transumo means a lot of administration. Really a lot of administration. The costs are higher than the benefits. There are so many rules that you discuss more about that than about the project itself...¹⁸⁹

[knowledge-worker / leader thematic working group]: especially in the beginning it was unclear in which [Transumo] cluster the A15-project belonged. Transumo is primarily a subsidiser. There is no one in Transumo that links [the A15-project] to other projects¹⁹⁰.

[member steering board]: I know little about Transumo. [The project-leader] is very glad that Transumo is [now] satisfied with the project: money comes in¹⁹¹.

[member management team]: [the embedment in Transumo] is very limited. There is very little action for common knowledge. Here at [my institute] I also do another project for Transumo (...) but there is little cooperation between [this project] and the A15 (...) Transumo is a subsidizer, period. It is invisible, not transparent... once in a while there is a reception (...) Transumo lacks an important aspect... if they would organize a lunch lecture or something... structural brainstorming with a small group of people... that would be nice. It has to be attractive enough for one to go (...). I have [only] been to a Transumo meeting once¹⁹².

¹⁸⁹ Interview nr. 59 and 60 [appendix II]

¹⁹⁰ Interview nr. 58 [appendix II]

¹⁹¹ Interview nr. 56 [appendix II]

¹⁹² Interview nr. 66 [appendix II]

All participants had jobs with various other projects and obligations and most of them had to continuously legitimize their participation in the A15-project to their 'home organization'. Therein the position of the project-leader was especially difficult: he had to deal with a large consortium of stakeholders categorized in all these different groups, the direct bosses of each and every participant, and with Transumo's 'theme-leader', board, and directorate with all their reporting requirements. To a certain extent it seemed that all this distracted the project-leader from focusing on substance and intrinsically motivated tasks. According to a member of the management team, the project-leader was 'so busy managing' that he hardly had time for the substance of the project¹⁹³.

However, despite of the negative associations with Transumo, it did seem that Transumo eventually supported the project, and that it challenged the project-leader to improve the project. In the initial phase, the project received a 'yellow card' from Transumo. The project-leader protested and wrote an angry letter, but did adapt the project in the meanwhile, and in the end the A15-project was mentioned as an exemplary project within Transumo. As the main project-leader described in an interview:

From the beginning on, the project had a strange position [within Transumo]. In the beginning we were in the cluster 'freight transport'. We did not fit there. Then we became an experimental garden, but there were no resources reserved for that. Then Transumo took money away from other projects. We were also a bit behind. The kick-off was only in October 2006. (...) But where the project stands now... [Transumo-representatives] were here and said that we are ahead; we got a lot of partners together and we started up a transition process (...). Transumo has provided me with a lot of support. [An individual from Transumo's organizational team] is very constructive. (...) What I like about Transumo is that they say that we have to appreciate champions and frontrunners¹⁹⁴.

One can ask whether the project-leader would also have spoken these positive words, if the A15-project would not have become one of Transumo's most successful cases. But the point is that it did become a successful case, and that this did empower the project-leader to continue with the project, while also adding new elements to the process. In this regard, it can be argued that Transumo, despite of several hierarchical and formalised administrative structures, did contain some elements of the empowerment culture; they provided support - both recognition and extra financial resources - to the A15-project to run its own course, while at the same time challenging it to pay more attention to transition (management) aspects. One can question the extent to which the 'innovation-impulse' qualifies as an application of transition management (as elaborately discussed in section 4.2.5.), but the point here is that the A15-project was explicitly self-directed.

Regarding the question *who* was empowered by the A15-project, the most critical remark is that inhabitants of the A15-region and smaller transporting companies were not involved in the project, even though they can be said to 'suffer' the most from the effects of unsustainable mobility. One member of the management team stated that he intended

¹⁹³ Interview nr. 66 [appendix II]

¹⁹⁴ Interview nr. 52 [appendix II]

to include the ‘people’ aspect of sustainability, by involving ‘truckers’ (i.e. small transporting businesses) and local politicians that could represent the interests of surrounding inhabitants, but that there was no ‘space’ in the project to do so. Passenger transport was initially not even part of the subject under study. The main reason why passenger transport was still included later on, was that it was obviously a part of the ‘accessibility problem’ on the A15-corridor. During several meetings and conversations, participants commented how traffic jams on the A15-road were mainly caused by ‘all those people in cars that want to be home for dinner’. I often had the uncomfortable sensation that passenger traffic was mainly seen as ‘standing in the way of efficient freight transport’. If only we could get those people to travel more efficiently, collectively, and at more convenient hours, this would greatly facilitate the economic position of the Rotterdam harbour... This issue will be more elaborately and critically discussed in the next section on the empowering transition potential of the A15-project.

Having said all that, the A15-project explicitly aimed to empower actors in the A15-region to deal with expected challenges. It did so by translating and visualizing scientific information, building coalitions, and proposing several measures, including both technological and organizational aspects. An important dimension in this ‘empowering ambition’ was the call upon ‘regional actors’ to take matters in their own hand, and not to entirely depend on the decisions and investments of national government. The project clearly directed itself to the Rotterdam-region. The way in which the public brochures directed themselves at ‘those from Rotterdam’ illustrates how strongly most participants felt connected with ‘the region’. Although inhabitants were not involved, it did speak to a significant amount of companies and professional organizations in the Rotterdam area.

5.5 THE TRANSITION POTENTIAL OF THE A15-PROJECT

This section addresses the following two-fold question: *what if the plans and proposals provided by the A15-project would be realized, what kind of power would be exercised to enable a sustainability transition, and to what extent would actors be empowered?* As explained in chapter 3, the aim of this question is neither to ‘measure’ nor to ‘predict’ the contribution of the A15-project to ‘the transition to sustainable mobility’. Nor is the question to what extent the proposals of the A15-project are, will, or might be realised or ‘scaled-up’. Rather the question is *what if* these proposals would become reality; *what kind* of transition would that be? How would the resulting transport system in the A15-region differ from the current one? To what extent would power relations differ from the current ones? Who would be empowered by these changes? To answer these questions I mainly refer to the final public brochure¹⁹⁵, in which the ideas, outcomes, and recommendations of the A15-project are synthesized and communicated in the form of 1) a list of 10 leverages, action points and responsible partners (see section 5.2.2.), 2) an ‘inspiring future image’ for 2033, and 3) four ‘main messages’. Below I quote a few excerpts that characterize the four ‘main messages’ of the A15-project:

¹⁹⁵ Final brochure [document nr. 32, appendix III]

1. **Sustainable transport = accessibility and sustainability.** (...) every agreement about the construction of new infrastructure should be accompanied by ambitious agreements on making transport more sustainable, selective land-use and innovative traffic- and mobility-management.
2. **Transitions require stimulation and coercion.** (...) in order to realise transitions, stimulating measures and unconditional agreements (initiated by government or market) are very important to push companies in the right direction (...)
3. **No robust infrastructure without flexible sets of measures.** Investing in infrastructure provides an important contribution to the accessibility and robustness of the traffic system in and around the A15. Nevertheless, the Rotterdam region should prepare itself to implement 3D-measures. (...) A smart mix of MER- and 3D-measures has the potential to solve problems and realise ambitions. This is why one implemented both MER- and 3D-measures.
4. **It is about the combination of ‘techware’ and ‘orgware’.** (...) Transumo A15 makes clear that the great challenge in the transition to sustainable transport lies not in the development of new technology (‘techware’) but in the development of new governance-arrangements (‘orgware’). It is about new contract forms, coalition models and institutional arrangements (...)¹⁹⁶

These four messages are reflected in the ‘future image’ that the A15-project drew for 2033. Therein, the currently planned infrastructure expansions have been realised, but *on top* of that there is a “strict European, national and regional policy around ‘modal split’, in combination with billion-investments in water ways, inland harbours, rails, in land terminals and transport by pipe connections”, and as a result of that the majority of transport occurs by water, rail and underground¹⁹⁷. Inland shipping has become the main modality for container transport, optimally connected to other modalities. Road transport still exists for bulk carriage but trucks have become “clean and are so efficiently used through time-slots, that they deserve a worthwhile position amongst other modalities”. Also, inter-modal steering has been ‘embedded in common discourse’, and “without developing heavy management models there is an intelligent system of coupling cargo and pooling containers”. As a result “the practice of (half) empty ships and trucks is significantly diminished”. Moreover, mobility- and traffic management is applied beyond mere road-pricing policy (e.g. concessions for market-based slot-management), and it is coordinated in the harbour region by a regional platform. On the one hand, there is strict and forceful European and national policy (combining positive stimuli and ‘coercion’), on the other hand there is a more explicit role for regional ‘mobility managers’ and public-private platforms in the harbour area. In terms of power relations, this draws an image of current power structures grown stronger and more forceful, while at the same time a ‘new regional regime’ of mobility managers and public-private platforms is established. This future image is also reflected in the final deliverable, which calls upon national government to ‘give space for regional policy’.

¹⁹⁶ Final brochure, pp 55- 56 [document nr. 32, appendix III] *translated from Dutch by F.A.*

¹⁹⁷ *Ibid*, p. 46

Regarding ‘innovation’, ‘optimisation’, and ‘system innovation’, the following observations can be made. First, *optimisation* of the current transport system in the harbour plays a pivotal role. The largest part of the ‘future image’ is dedicated to a more efficient coordination of container flows through inter-modal steering. Such optimisation is enabled by *innovation* in container logistics, inter-modal technologies and extensive infrastructure expansion (rail, water, underground). The *system innovation* in all this is that the current transport system in the harbour – characterized by road congestion, pollution, inter-modal and organizational fragmentation – will be replaced by a new transport system that is better coordinated, more efficient, and relies much more on other modalities (rail, underground and especially water).

The ‘future image’ also mentioned other changes. First, by 2033, the Mainport Rotterdam has become a Green Port with a strong position on the global scene. Second, it also mentioned changes regarding passenger transport and living conditions in the A15-region. By 2033, the morning and evening rush hours have disappeared, due to flexible working times, more people working from home, mobile offices, and an overall decrease in the distance between housing and work places. The amount of people that live in the harbour region has significantly increased because “living near the highway and in the harbour region has become much more attractive. In 2033 these are the most interesting residential areas and business sites for companies in the region”. This because “the local transport in the harbour and collective transport in the city, harbour and region, has gone through a gradual process of electrification” and “also the cleaner industry contributes to clear air and silence in the region”. Besides these environmental and transport-related changes, there is also change of a more political, economic and social nature: “In 2033 our entire living environment confronts us with ‘price stimulants’. For every service you pay for what you use. This concerns mobility, housing, working, recreation”.¹⁹⁸.

The main ‘transition potential’ of the A15-project, appears to lie in *convincing public-private coalitions in the harbour region*, to provide and implement the necessary investments and measures to replace the current transport system in the harbour, by *a more efficient and better coordinated transport system, based on regional mobility management (including pricing policies), and an extensive infrastructure for alternative modalities (rail, underground and especially water)*. If public-private actors succeed in realising such a system by 2033, this would be a ‘system innovation’ in the A15-transport system, both in physical and organizational terms. This system innovation can be described as *a transition from a highly fragmented and sub-optimal system that heavily relies on road transport, to an integrated and efficiently managed inter-modal transport system*.

The question is *which* regional actors are empowered by this transition. If the ‘future image’ that the A15-project envisions would become reality, who would be (dis)empowered by this? Supposedly, the situation in 2033 would entail the ‘empowerment’ of numerous actors around the harbour region, ranging from

¹⁹⁸ Final brochure, p.48 [document nr. 32, appendix III]

governmental actors (who would implement ‘strict’ policies), to business actors (who would profit from improved infrastructure and attractive business sites), and mobility managers (who would receive contracts to coordinate transport in the region). At first glance, the envisioned situation in 2033 would also ‘empower’ citizens that work and live in the harbour region, in the sense that there would be improved living and working conditions; clean air, silence, a better collective transport system, and no rush hours. However, when reading carefully, there are elements in this vision that could *disempower* the citizens of the A15-region. This disempowering ‘danger’ lies mostly in the *combination* of 1) ‘strict European, national and regional policy’, 2) ‘mobility management’, and 3) ‘pricing policies’. In practice, this could mean that citizens that work in and around the harbour will be ‘financially stimulated’ to 1) work outside office hours (‘flexible working times’), 2) live in/close to industrial harbour areas (‘reduced commuting distances’), 3) make use of collective transport, and/or 4) purchase electric cars. As explicitly stated in the vision, citizens will have ‘to pay for every service they use, including mobility, housing, working and recreation’. As already discussed in chapter 4, the idea of stimulating citizen behaviour through *financial* measures (“seducing and rewarding”), is constructed as enabling ‘free choice’. However, for a citizen population that is relatively weak in financial terms (i.e. harbour personnel) such financial measures can soon turn into ‘having no choice’.

For instance; if the harbour region is to become ‘one of the most attractive regions’ for both companies and residents, this implies an increase in real estate prices. One wonders how low-income workers at the harbour are then expected to live ‘closer to their work’. Of course they are ‘free’ not to, but this could imply that they would have to travel and work at night, i.e. during hours in which they can afford to pay for the ‘transport services’ (which are ‘flexibly priced’ by mobility managers). Moreover, the sophisticated mobility management system that is envisioned by the A15-project, would require the integration of transport surveillance systems, traffic flows (of both goods and passengers), and financial flows (between government, business *and* citizens), which in turn would require highly interconnected and sophisticated ICT-technologies applied to the entire harbour area. This means that in order to profit from the provided ‘mobility services’, citizens would have to cooperate with this integrated system; purchase the necessary technological products and provide the necessary information on when and where they travel. Besides the moral objections that citizens could have against this (due to privacy issues), all this also requires astonishing amounts of financial investments. Considering the ‘billion-investments’ (!) that the A15-project already envisions to be spent on new intermodal infrastructures, one wonders where all this money is supposed to come from. Perhaps the countless fees that citizens will pay for ‘all the services they use’? Even if financial measures would be designed to be ‘fair’ to low-income groups, the point remains that financial measures to organize desirable citizen behaviour are inherently based on the mechanisms of extrinsic motivation: travel behaviour would literally depend upon the ‘supervision and rewards mediated by others’.

There is however a hopeful comment regarding (citizen) empowerment in the future image of the A15-project: “it is not only about public-private cooperation, but also about an adaptive network structure of (relatively) small citizen collectives, companies,

government and other organizations”¹⁹⁹. This idea of citizen collectives and ‘other relatively small organizations’ shaping the transport policy in the harbour region, has received little attention in the A15-project. Even though the final documents include these innovative images in their ‘future image’, these played an inferior role in the main outcomes and proposals²⁰⁰. However, a more optimistic perspective invites us to acknowledge two of the ‘action points’ that the A15-project recommends for the future: 1) the proposal to ‘set up a regional agenda for pricing policies’, and 2) the proposal to ‘organize integrative sessions’ (with representatives of local organizations) to “develop a strategy for land-use and mobility for the A15-corridor by coupling local initiatives and building regional coalitions”²⁰¹. It can be expected that in all these meeting between ‘local organizations’, the possible implications for citizens will be critically discussed. The outcomes of the thematic working group on ‘governance innovation’ explicitly address the need to involve citizens, and the hope is that further activities inspired by the A15-project will take these recommendations at heart. If so, the A15-project has the potential to inspire regional coalitions that will not only facilitate governmental departments, business interests, and public-private partnership, but also empower the citizens living and working in the Rotterdam harbour region.

¹⁹⁹ Final brochure, p. 48 [document nr. 32, appendix III]

²⁰⁰ The exception is the thematic working group on governance innovation. However this was only one out of six working groups in the third round of the project. Hence the conclusion that it received hardly any attention, compared to the overall project focus and outcome of the project.

²⁰¹ Ibid, p. 54

CHAPTER 6.

Case-study Sustainable Logistics



Duurzame Logistiek op het Connekt Congres 2008

Mobility Connekted:
Green, Safe, Reliable en Efficient

6.1. OBSERVING SUSTAINABLE LOGISTICS

6.1.1. Background & context of Sustainable Logistics

Around the turn of this millennium, the Dutch *Ministry of Transport, Public Works and Water Management* (V&W) ran several programs to stimulate efficiency improvement in the logistics and freight transport sector. Examples of such programs were *Transaction Modal Shift*, *Transport Avoidance*, *Energy Efficiency in Transport*, and *CO₂-reduction in Freight Transport*. Because the results of these programs were found insufficient²⁰², a new program was set up that would integrate and improve these previous programs. In 2005 the Policy Document on Mobility announced the start of the ‘stimulation program’ *Transport Efficient Economy* (TEE). The responsible V&W department – the *Directorate General of Transport and Air Transport* (DGTL) – hired Buck Consultants²⁰³ to conduct a preparatory study, which was called *Towards a Transport Efficient Economy*²⁰⁴. In 2006 this study was followed by preparatory activities by DGTL in cooperation with several consultancies, resulting in various proposals for the new TEE-program.

As V&W believed that TEE “should stand closer to the market”²⁰⁵ (and therefore not be organized from within the ministerial department), the network-organization *Connekt*²⁰⁶ was asked to prepare a proposal to conduct TEE, presented in January 2007. The TEE-program was thus placed under *Connekt*, managed by the program manager that previously had coordinated the program *Transport Avoidance*, and supported by a team that consisted of several policy officials (seconded from V&W) and consultants. Soon after the name of the program changed from *Transport Efficient Economy* to *Innovation program Sustainable Logistics* (hereafter referred to as ISL).

ISL had its official kick-off in June 2007 and conducted several subprojects and related activities throughout 2007, 2008, and 2009. During that period several team-members left, and new team-members were hired. In the mean time, the commissioning authority (V&W / DGTL) went through a process of reorganization, and several other initiatives related to freight transport unfolded. At the end of 2009 ISL was evaluated by an external consultancy, which led to a significant restructuring of the program. Several subprojects were ended, the program manager was replaced by a manager from *Connekt*, the goal-setting and target-group became simplified and more focused (to be elaborated later on).

²⁰² The programs were found to not be sufficiently mobilizing towards companies.

²⁰³ Buck Consultants is an international consultancy with expertise on freight transport

²⁰⁴ Buck Consultants 2007 [document nr. 33, appendix III]

²⁰⁵ Offer *Connekt* 2007, p.5 [document nr. 34, appendix III]

²⁰⁶ *Connekt* is a network-organization that provides a platform for public-private partnerships and organizational support for several programs and committees related to transport. The organization is set up as a foundation and its members consist of several public and private actors. See: <http://www.connekt.nl/>

6.1.2. My involvement in Sustainable Logistics

My involvement in ISL started in the summer of 2005. When Buck Consultants was commissioned by V&W to conduct a preparatory study on the new program *Transport Efficient Economy*, they invited my supervisor professor Jan Rotmans to some of the expert meetings, and it was decided that DRIFT would contribute to Buck's preparatory report in the form of a 'transition essay' on the freight transport sector. Together with other Drift-researchers, I wrote this essay on 'the Transition to Sustainable Freight Transport'. Meanwhile, in October 2005 I attended a V&W meeting on the relation between air quality and transport²⁰⁷, where I coincidentally met the manager of the *Transport Avoidance* program, who was also to be the manager of the new TEE program (hereafter referred to as 'the manager'). We met a few days later to discuss the transition essay, and his comments were processed in the final version of this essay, which was included in the appendix of Buck's final report *Towards Transport Efficient Economy: preparation for a program*²⁰⁸.

In March 2006 I was invited to a meeting on the ongoing development of the TEE program, attended by up to thirty individuals; public officials, consultants, and researchers. It was especially this day that sparked my interest for the TEE-program. I wrote a reflection on the meeting, relating the discussion to transition management and my PhD-research. In this document I claimed that "the problems and challenges within and around the TEE program are typical dilemmas that transition management focuses on, such as creating a common problem definition, interaction between long-term goals and short-term action, cooperation between government and business, the emphasis on best practices and frontrunners, coalitions of 'willing and able' business actors, etc.". In June 2006 I sent this document to the manager, who responded that he was interested to discuss how my PhD-research could be combined with the new program. We met at the end of June and the manager told me that my research was especially relevant for two specific sub-themes of the TEE-program; 'agenda-setting' and 'innovation'.

In the following months I participated in several TEE-meetings, which were held every few weeks at V&W, organized by the manager and his supporting staff, and attended by several consultants that prepared studies and proposals for the various sub-themes and subprojects of the program. At some of these meetings I was asked to give presentation on transition management and my PhD-research. I also arranged two meetings with the manager, two consultants, and my supervisor Jan Rotmans, to discuss the added value of transition management, and my potential role in the program. Although most individuals participating in these TEE-meetings seemed vaguely interested in transition management, it was not really picked up. The focus was on consultants coming up with planned proposals for separate subprojects. As all this was 'in development', it remained unclear what my role was/would be exactly. Nevertheless I always felt welcome to the meetings and was given the impression that the manager appreciated my interest and participant observation in the meetings, so I kept attending the TEE-meetings.

²⁰⁷ Fieldnotes [meeting nr. 13, appendix I]

²⁰⁸ Buck Consultants, 2007 [Document nr. 33, appendix III]

In 2007 the situation changed. The program moved from The Hague to Delft, as it was placed under the network organization *Connekt*. There was now a small program-team consisting of the manager, a financial manager seconded from V&W, and a few project-leaders for the different subprojects. Soon the team would be joined by a communication advisor and a supporting assistant. The name of the program changed from *Transport Efficient Economy* to *Innovation Program Sustainable Logistics (ISL)*, a logo and website were set up, and a date was set for an official kick-off conference in June 2007. In the mean time, I was invited to join the team-meetings that were held every two weeks. In March I wrote a proposal on what I could contribute to the program, which was formalised in a budget proposal and official contract in April²⁰⁹. From then onwards I officially worked for ISL one day a week, and DRIFT was paid for my activities. The manager emphasized that he did *not* want me to just ‘observe’, but that he wanted me to contribute to ISL and come up with a concrete proposal on how to organize a transition management process²¹⁰. In the formal contract my contribution was described as follows:

1. Actor-analysis & actor-selection => interviewing potential ‘frontrunners’ in the logistics sector, setting up selection criteria to identify relevant partners
2. Discourse analysis => gaining insight in the prevailing discourse in the logistical sector and relating this to the ambitions of the Sustainable Logistics program
3. Process design => a (transition management) proposal for Sustainable Logistics, i.e. how to organize a process involving ‘frontrunners’

In practice, my main activity became to help prepare the round table that was to be held during the kick-off in June. The idea was that this round table would function as ‘the first meeting of frontrunners’, to be followed up by other meetings. I had several meetings and email dialogues with the manager, and various external advisors, on which actors to select and invite to the round table, and on how to design the process of the round table session. Therein I attempted to integrate as many ‘transition management elements’ as possible, but the formal setting and the external political pressure surrounding the round table limited the possibilities to organize it as a transition arena meeting. Especially the expectation that the Minister of V&W Camille Eurlings would join the last half hour of the round table meeting, (which in the end did not occur), caused a particular official and risk-averse attitude towards the meeting.

As such I primarily focused on preparing the ‘substance’ of the meeting, in terms of interviewing participants, and analyzing and comparing their views. In May and June 2007 thirteen interviews were held, nine of them by the manager and myself, four by the manager and other team members²¹¹. I set up the interview questions²¹², wrote a report of all the interviews and analyzed them in terms of main themes and points of agreement and disagreement. The round table in June was attended by a total of seventeen participants from the logistics sector and four from the ISL-team. The seventeen

²⁰⁹ Proposal & Contract my role in ISL [document nr. 49, appendix III]

²¹⁰ E-mail program manager [document nr. 50, appendix III]

²¹¹ Interviews nr 35-43 [appendix II]

²¹² For an overview of the interviews questions, see appendix II

participants included business actors (both shippers and carriers), public officials, representatives of one environmental NGO, and one trade organization, chairs of various platforms, one business professor, and the director of Connekt. We come back to the set-up of this round table later on, but here it is important to mention that the manager was disappointed with the outcome of this round table discussion²¹³. Partly as a result of that, there was no real follow-up of this round table, despite of several meetings and emails in which we reflected on the outcomes of the round table and discussed how to continue.

In May 2007 the ISL-team had been joined by a new individual who was assigned to be the project-leader of the sub-themes 'agenda-setting' and 'innovation'. In his project-proposals he stressed the intention to 'create a future vision on sustainable logistics together with frontrunners' by applying (some) transition management ideas, but this proposal never passed the proposal stage. His project proposals continuously needed to be discussed and adapted by 'the steering group'. This was also confusing for my role, as my activities had been categorized under these subprojects. The idea of me writing my 'own transition management proposal' seemed odd in this context. However, as I had been explicitly asked by the program manager to do so, and this had also been agreed in my contract, I did so anyway. In December 2007 I wrote an analysis of ISL - applying insights on transition management, power, and empowerment - in which I made a concrete proposal on how to organize a transition management process, specifying the type of meetings to be held and which actors to involve. Nothing happened with my proposal, and I saw no point in 'insisting'. The project-leader of agenda-setting was a particularly experienced and competent individual, not only did he have extensive transport expertise, he also had elaborate experience with project-management, having worked at both TNO and V&W, and now running his own consultancy business. This project-leader had already included several transition management aspects in his proposals for agenda-setting, and if he could not even get this approved, who was I to lobby for my 'own proposal'? Not only would it be unrealistic, it also contradicted with the spirit of my proposal, in which I emphasized that transition management was not a 'subproject' but something to be worked on *together* with the other project-leaders, and something to be supported by the entire team.

At the beginning of 2008 an external advisor was asked to evaluate the ISL-program and make suggestions for improvement. In January 2008 I was invited to a 'strategic session' with this external advisor, the manager, and the project-leader of 'agenda-setting' and 'innovation'. During this meeting we brainstormed about a strategic repositioning of ISL, including the idea of turning the program into an independent organization, with its own business case and independent from governmental supervision. None of these radical ideas were realised, but this meeting and the evaluation of the external advisor did impact the program. Amongst many other things the external advisor pointed out that ISL needed a 'new strategic impulse' and that the team was lacking 'passion', interaction, and a coherent vision (due to all the separate subprojects). This evaluation was used as input for a team-session in March 2008, which turned out to be quite confronting for ISL team-

²¹³ Fieldnotes [meeting nr. 82, appendix I]

members in several ways. The external advisor criticized some of the project-leaders who only focused on their own subprojects. The director of Connekt also joined the meeting shortly, and provided what seemed to be a wake-up call, saying things like “if you do not like change and depend on a clearly fixed path, then you should not work here”²¹⁴. Soon after that one of the project-leaders left the team.

It was around that time, March 2008, that I decided to really ‘give up’ my seemingly idle efforts to organize a transition management process within ISL. As explained earlier, I had written a proposal in December 2007, nothing happened with it, and there seemed to be no point in insisting. Besides there being no point (given the fact that the entire ‘agenda-setting’ project was not coming through), it also seemed inappropriate given the new situation in 2008, in which the whole program and team seemed to be reconsidered by the program manager, his external advisor, and the Connekt-director. More importantly, I was given the opportunity to focus on another *concrete* activity: helping to organize a ‘Sustainable Logistics’ study-trip to London. For this study trip, which took place in June 2008, over ten actors in the Dutch logistical sector were invited to join the ISL-team to go explore how the British deal with sustainable logistics. In cooperation with the manager and the project-leader of ‘innovation’, I worked on setting up the thematic program for this study-trip. This involved contacting several public, private, and research parties in London and preparing a ‘reader’ for the study trip, specifying the background of the different organizations we would visit, including an on-site visit to DHL. I wrote a report of the study trip, including the many given presentations, and organized a ‘reunion’ with the people who had joined the study-trip. The organization of the study-trip provided me with several insights on transport discourse and the ‘transport community’ (as discussed in Intermezzo A).

After September 2008 I ended my involvement with Sustainable Logistics, in order to focus on my PhD-thesis. Through out 2008 and 2009 several other team-members left (including the project-leader of agenda-setting), and new individuals joined. The subprojects ‘agenda-setting’ and ‘innovation’ fell apart in several separate activities, retrospectively referred to as ‘strategic projects’. After that I spoke with one project-leaders and the manager on a few occasions, and in 2010 they told me that the ISL program had been quite extensively altered in the mean time. The program was evaluated by external consultants, several project-leaders left, the program manager was replaced by another Connekt manager, different ‘sub-projects’ were ended, and now ISL is primarily focused on ‘connecting’ business frontrunners and ‘awarding’ them for CO₂-reduction in the field of logistics, through the so called *Green and Lean* awards.

6.1.3. Data-collection in Sustainable Logistics

Methods applied to collect data on ISL ranged from ethnography, participant observation, and action research, to interviews and document reviews. All project activities that I was involved with – as described in the previous subsection – have been used as input for this

²¹⁴ Fieldnotes [meeting nr. 109, appendix I]

case-study, and will come up in the analysis at some point. A detailed list of all meetings, documents, and interviews (including interview question) used for this case-study, is provided in the appendices. In contrast to the previous two case-studies on Transumo and the A15-project, this case-study on ISL was primarily focused at the *tactical* level of program management. The majority of meetings attended were of the program management team, and my closest interaction has been with the manager of ISL. Although the specific themes that I was mostly involved with – ‘agenda-setting’ and ‘innovation’ – were called ‘projects’, they were actually more tactical and strategic activities at the program level (i.e. not separate operational projects). What is similar to the other case-studies is that the ‘steering board’ was only observed from a distance and from the perspective of the program manager and project-leaders, i.e. how they experienced and communicated their perception of this steering board.

It should also be emphasized that my involvement with ISL started in 2005 and ended in 2008. As such my participant observation primarily focused on the preparation and initial phases of the program. Attention for program activities after September 2008 has been limited and primarily based on document reviews (e.g. reports, website, news letters), and some sporadic informal conversations with members of the ISL-team. In contrast to *Transumo* and the *A15-project* – both finalized in 2009 – the ISL program is currently still up and running. As such there are no final reports or outputs to refer to. All this would be a problem if the aim was to evaluate the ISL program for its overall success or impact, but, as stated earlier, this is NOT the aim of this (or any other) case-study. The aim is to learn of my observations within ISL. This means that in the following pages, whenever I speak of the ISL program, one should read ‘*ISL as far as observed*’.

6.2. TRANSITION AMBITIONS IN SUSTAINABLE LOGISTICS

6.2.1. *What is to be transformed: why, how and when?*

The basic premise of ISL was that logistical chains need to be made more energy-efficient. This requires business actors to organize their logistical processes in a different way, and governmental actors to facilitate and stimulate business to do so. ISL explicitly targeted not only the providers of logistical services (transport operators or ‘carriers’), but also the procurers of logistical services, i.e. production companies, retail companies, construction companies, and so on (generally referred to as ‘shippers’). As such the system that needed to be transformed was not simply ‘the logistical sector’, but rather the entire industry and the way it organizes logistical processes:

(...) the ambition is to increase energy-efficiency in the logistical chain, amongst others by stimulating that goods are transported in a compact, smart and economical way. Breeding a sense of urgency and responsibility amongst relevant parties regarding this theme is an important starting point. Both shippers and carriers have to be penetrated by the fact that they can do something in order to improve energy-efficiency in the chain. The program is

directed at eventually getting companies to actually carry out concrete activities – in cooperation with and supported by the program²¹⁵.

The reason why all this was believed to be necessary is that, on the one hand, freight transport is a “necessary condition for economic development”, while “at the same time the policy goals in the field of decreasing CO₂-emissions and energy-efficiency are getting ever more ambitious”²¹⁶. As such the ambition is to “limit the impact that freight transport has on the use of fossil fuels and the environment, without harming economic development”. Based on the report of Buck Consultants, it was decided that the program would focus on *decreasing the use of energy in the logistical chain*. The challenges and ambitions of the program were communicated in a (English) public brochure as follows:

Ambition. The fast and reliable transport of goods is one of the strengths of the Dutch economy. We’re good at it, and it pays. The challenge: Dutch industry can and must make its transport and logistics even more efficient and sustainable. We say ‘can’ because we have the expertise, or can develop the expertise, to create top-quality, efficient and sustainable transport in a highly populated country. We say ‘must’ because the negative aspects of transport are simply going to intensify, both in relation to traffic, the environment and our financial resources. Together with the Dutch Ministry of Transport, Public Works and Water Management, Dutch industry is taking on this challenge in the Sustainable Logistics program. The ambition: a sustainable improvement in the competitive position of Dutch industry by minimising transport (fewer kilos and cubic metres), more logistical efficiency (fewer kilometres) and less use of fossil fuels (fewer litres). To put it briefly, Dutch goods transport will become compact, efficient and economical²¹⁷.

The chosen strategy to achieve abovementioned ambitions was quite diverse. The ISL program consisted of several subprojects, which ranged from ‘branch-cooperation’ and ‘business-profiling’, to ‘agenda-setting’ and ‘innovation’. Through this, ISL aimed to apply several instruments to achieve its goals, combining visioning and networking at strategic levels, with more concrete activities at operational levels. In its public brochure, the program described its approach as follows:

Approach. A compact flow of goods, smart logistics and economical transport will benefit industry both now and in the future. The Sustainable Logistics program has been set up to achieve these benefits. Industry initiates, government stimulates and coordinates and science analyzes. It is not intended as a research program, nor as a subsidy scheme. It has a hands-on approach. *The approach:* - formulating ideals - executing projects, -creating showcases - developing instruments - sharing experiences

Although ISL explicitly intended *not* to be a research program nor a subsidy scheme, it did make extensive use of both research and subsidies, especially in terms of hiring consultants and transport experts to produce proposals and reports to operationalize the

²¹⁵ Connekt Offer 2007, p.2-3 [document nr. 34, appendix III] *translated by F.A.*

²¹⁶ Connekt Offer 2007, p. 5 [document nr. 34, appendix III] *translated by F.A.*

²¹⁷ Public Brochure English, p. 1-2 [document nr. 35, appendix III]

program. These proposals and reports, however, were evaluated and selected based on the extent to which they had ‘practical value’ in terms of ‘mobilizing’ business actors.

6.2.2. Who transforms?

As described in section 6.1.1, ISL was initiated by V&W and conducted by Connekt. However, the program was set up ‘in cooperation’ with several other partners, which were all represented (mostly by their directors) in the steering group:

- Environmental NGO the *Netherlands Society for Nature and Environment* (SNM)
- A shippers association for internal and logistical activities (EVO)
- Transport organization *Transport & Logistics Netherlands* (TLN)
- Transport organization *Royal Netherland Transport Association* (KNV)
- *Confederation of Netherlands Industry and Employers* (VNO-NCW)
- The *Ministry of Agriculture, Nature and Food Quality* (LNV)
- The *Ministry of Housing, Spatial Planning and Environment* (VROM)
- The *Ministry of Economic Affairs* (EZ)

The managers and project-leaders in the ISL-team were mostly former public officials from V&W, transport experts, and/or consultants. The individuals and organizations directly involved in the program were not the actors that would ‘change logistics’; rather they would *facilitate and motivate business actors* to take up measures to make their logistical processes more efficient. This was continuously emphasized in documents, public brochures and presentations; “businesses need to be confronted with the consequences of their action, they have to (voluntarily) think along and become active to contribute to the achievement of the ambition”²¹⁸. In the public brochure we see this emphasized in the following two phrases:

Together with the Ministry of Transport, Public Works and Water Management, ***industry is taking on this challenge in*** the Sustainable Logistics program. Industry ***initiates***, government ***stimulates*** and ***coordinates*** and science analyzes²¹⁹.

On the one hand, the program aimed to involve *large companies* in a strategic vision on sustainable logistics (subproject ‘agenda-setting’), on the other hand it also aimed to *mobilize small and medium-sized businesses* (SMB). The latter primarily occurred in the subproject ‘branch-cooperation’, in which various *trade-organizations* were challenged to set targets and ambitions for logistics in their specific sector (e.g. construction, fashion, retail, carpets, agriculture, etc.). Trade-organizations were seen as appropriate partners to mobilize the SMB, because “we may expect that [trade-organizations] – more than individual businesses – have attention for strategic and sustainable business policies in a future societal perspective. For the participating business members they are a recognisable and trustworthy partner”²²⁰. At the end of 2008 a total of 12 trade-

²¹⁸ Connekt offerte 2007, p.7 [document nr. 34, appendix III] *translated by F.A.*

²¹⁹ Public brochure, p. 2 [document nr. 35, appendix III] *emphasis added*

²²⁰ Connekt Offer 2007, p. 13, [document nr. 34, appendix III] *translated by F.A.*

organizations had been approached, but the majority of the activities were still “in the phase of research”²²¹. The *branch-cooperation* was one of the subprojects that were prematurely ended in 2010 as a result of the 2009 evaluation.

At the overall program level there were intense communication efforts to ‘reach’ business actors; websites, newsletters, videos, interviews, press releases, countless meetings (both formal and informal), presentations, conferences, and so on. There was also explicit attention for the ‘profiling’ of exemplary businesses and their ‘best practices’. The subproject *business-profiling* aimed to develop instruments that could specify how and when logistical processes could be considered sustainable. These instruments were not to be developed ‘top-down’ by the program itself, but rather ‘bottom-up’; various organizations – ranging from research institutes to consultancy firms – developed instruments (mostly focused on measuring CO₂-reduction), and subsequently a committee of experts selected the ten most ‘promising’ instruments, and tested these in practice with several partners. In 2008 a “CO₂-measuring scale” was made available on the ISL website as a web-application that could be used by providers of logistical services.

In the second half of 2008 ISL became increasingly focused on rewarding companies for best practices in CO₂-reduction. Inspired by the Global Reporting Initiative and rewarding schemes in the US and UK/London, the development of a transport-specific ‘Green Award’ was explored in cooperation with the *Platform for Sustainable Mobility* (see *Intermezzo A*). During the Connekt conference held in October 2008, the first ‘Lean & Green Awards’ were handed out to nine businesses, including both shippers and carriers. The new slogan of the restructured ISL-program in 2009/2010 – ‘Be Lean Be Green’ – directly referred to these conferred awards.

6.2.3. What’s new?

The novelty of ISL seemed to primarily lie in the search for a new role division between government and industry. The program was *not* about top-down government regulation, and also *not* about providing subsidies to industry. ISL aimed to balance between *stimulating* and *facilitating*, on the one hand propagating a ‘sense of urgency’ at a strategic level, while on the other hand coming to binding agreements (tactical level), and also developing concrete instruments and conducting pilot projects (operational level). None of this – sense of urgency, agreements, instruments, projects – was to be imposed by the government, rather the ISL program aimed to get business actors ‘to do it themselves’. Moreover ISL combined several different themes within one overarching program; freight transport, ‘logistics in the board room’, sustainability, energy-efficiency, transport avoidance, etc. Although all these themes were given extensive attention in previous programs, numerous platforms and committees, the *integration* of these different themes was relatively new and, in many ways, challenging.

²²¹ ISL annual report over year 2008, p. 7 [document nr. 38, appendix III] *translated by F.A.*

The well-known problem of ‘no logistics in the board room’ mainly has to do with the fact that for the majority of industry, transport costs are so low (2 – 6 % average of total costs) that transport receives no priority in strategic discussions. Most logistical managers of production companies do not participate in strategic board room discussions. Moreover, for most companies ‘corporate social responsibility’ and ‘sustainability’ are primarily associated with labor circumstances and energy-issues; the link with *logistical* processes is not explicitly made. Even when ‘sustainable transport’ is addressed, this is mostly about energy-efficient vehicle technology, not about *logistical* planning. As such, the role of logistics is undermined in both economic and sustainability discourse. ISL explicitly combined two messages; 1) improving logistical processes is good for energy-efficiency, and 2) therefore it is good for both profit and planet. Although none of these messages were new in themselves, they had so far mostly been communicated separately as *different* themes (logistics, energy-efficiency, sustainability).

ISL also translated this message into concrete instruments that could be used by companies to scan their logistical processes and to measure related CO₂-emissions (e.g. the *Digiscan* and *CO₂-measuring scale*). These instruments were made freely available on the ISL-website and used for educational purposes, both in terms of higher education courses and trainings for consultants. This was innovative in the sense that these instruments were not designed as standard regulations or controlling mechanisms to be imposed by government, but rather as practical tools for industry to ‘monitor itself’ and to discover what the possibilities for improvement were. Rather than providing industries with money to make them do things they would otherwise not do (an approach that did not sufficiently work in previous programs), it was about providing industry with practical tools for self-improvement, accompanied by a platform where companies could share experiences and be ‘rewarded’ and ‘recognized’ for ‘best practices’.

Another innovative aspect of the ISL program was that even though it was explicitly focused on logistics, it did not primarily direct it self at the logistical sector (i.e. transport operators / carriers), but rather at the companies making use of logistical services (i.e. shippers). In a highly competitive sector where transport operators have to offer the lowest possible price for transport in order to survive as a business, it was particularly hard to communicate a strategic sustainability message. Even if energy prices rise and government sets stricter regulations regarding CO₂-emissions, individual transport operators would not be affected by these measures, for the simple reason that 1) it affects all of them (thus not impacting their relative competitive position), and 2) they can directly charge the increasing costs to their costumers, i.e. the shippers. As such, the only way to improve the logistical sectors would be if the *shippers* start demanding sustainable logistics from their carriers/ logistical service providers. Based on these insights, the ISL program paid significant attention to the *procurement* of logistical services (by shippers). One of the strategic projects that came out of the subproject ‘agenda-setting’ (see section 6.2.5) was called *Sustainable Procurement of Logistical Services*²²². In this project 25 shippers shared their vision and experiences in interviews and workshops, which resulted

²²² See: <http://www.duurzamelogistiek.nl/toolbox/duurzaam-inkopen/>

in the set up of a platform and the development of a so-called ‘maturity matrix’, indicating how far ahead companies were in the sustainable procurement of logistical services. In the resulting pilot-experiments, the challenge was to integrate sustainability factors (e.g. carbon footprint or CO₂) within their tenders for logistical services. The aim was that sustainability indicators would become an additional factor that transport operators had to compete on (rather than just lowest possible prices).

6.2.4. How is sustainability dealt with?

Let us start with the changing name of the program; from *Transport Efficient Economy* to *Sustainable Logistics*. This changing title illustrates the history and background of the program, and the way it interacted with its societal context. While initially ‘efficient economy’ seemed the most suitable concept to mobilize industry, by 2007 the sustainability concept had taken off as a political ambition, to such extent that a government-initiated program with energy-saving ambitions could almost not afford *not* to profile itself in terms of sustainability. As described during a meeting:

When we started, it was called Transport Efficient Economy... the word ‘sustainability’ was absolutely not allowed... (...) nor was the word ‘transition’. [The director of DGTL / V&W] told me that they already do that at Transumo, and that there is not much to it. But then the new cabinet happened... and Al Gore... [the new minister] Jacqueline Cramer... and then [the director of DGTL / V&W] had no choice. He could hardly get it out of his mouth, but he had no choice... This is how it went...²²³.

The shift from *transport efficient economy* to *sustainable logistics* illustrates how the program ‘balanced’ between economic concerns and sustainability discourse, and between industrial interests and governmental interests. Initially (2005/2006) the manager himself seemed a little skeptical and hesitant about using the sustainability concept. This does not mean that the final use of the word ‘sustainability’ had a mere strategic or political function. On the contrary, having worked on transport avoidance for years (one of the most ‘environment-friendly’ approaches to transport), the manager genuinely wanted freight transport to be improved in economic, environmental, and social terms, and to conduct a successful project that would *concretely* contribute to such improvement. His initial skepticism towards sustainability seemed to primarily come from an allergy towards window-dressing discourses and political hypes. The manager was a critical thinker who scrutinized the truth and authenticity of anything that came his way, whether it was academic, consultancy, or political discourse. On the other hand, having worked as a public official for decades, he was accustomed to using political discourse as a strategic necessity. As such there was a continuous balancing between going along with strategic, political discourse, while in the mean time following a genuine self-chosen direction.

The decision to focus ISL on energy-efficiency and CO₂-reduction also had to do with this ‘balancing’. Energy-efficiency and CO₂ was the most strategic focus, and it also provided a

²²³ Fieldnotes [meeting nr. 107, appendix I]

practical and concrete focus for the program. By linking transport efficiency to energy efficiency and CO₂, the program safeguarded interest and support from both government and industry. During one of the first meetings in 2006 – in which the overall set-up of the TEE program was discussed²²⁴ - it was emphasized how transport efficiency in itself was not interesting for most companies (because transport costs are so low), and that the ambition of this program was to ‘make transport efficiency as important as energy efficiency’. Two years later, a team-member characterized this approach as follows; “CO₂ is the feel good factor, energy-saving is the business case”, emphasizing that the focus on energy-efficiency was necessary to safeguard the interest of business²²⁵. The focus on energy enabled ISL to have clear targets (i.e. CO₂-reduction) and a clear message, and this was expected to safeguard a concrete and practical approach, which would avoid drowning in endless discussions on all the other aspects of sustainability.

There was however a high level of awareness amongst all team-members that sustainable logistics in principle went *beyond* energy. For a session in August 2007²²⁶ all team-members were asked to write down what ‘sustainable logistics’ meant to them, and what they thought to be the best strategy to achieve this. In these written reflections team-members demonstrated different perspectives on what sustainable logistics was, but one important commonality was that they all argued that ISL should continue to focus on planet and profit in terms of energy-efficiency and CO₂, even though they acknowledged that sustainable logistics was broader than that. In the individual vision documents²²⁷, this dilemma was formulated as follows:

[team-member 1] (...) how broad do we interpret sustainability? Do we also consider the people aspect (= labor circumstance)? And if so, do we only look at labor circumstances in logistics (i.e. respecting work and leisure time) or also those in the production process (e.g. child labor)? The transport of goods is in itself an economic activity that is based on a pure economic rationality (on the place of destination the good provides more value). It impacts scarce resources. Current bottle-necks are the impact on (fossil) fuels, emissions of CO₂ and air pollution, spatial occupation (roads and warehouses). As far as I am concerned Profit and Planet are on the foreground. On the other hand we cannot speak of a sustainable logistical chain if somewhere in that chain the People aspect is not well take care off (...)

[team-member 2] (...) a crucial question is: do we choose the ‘triple bottom line’, with other words, do we consider people, planet and profit? If we want to connect with initiatives like GRI [Global Reporting Initiative] than the three Ps are important. It does make it all a lot more complex. If we look at the Platform Sustainable Mobility, than it is also possible to take a much less integrative approach. (...) We could also do it that way. In that case we don’t do anything with labor circumstances, waste, recycling, (traffic) safety and noise hazards, but we do something with emissions. In that case sustainable logistics is about compact, smart and efficient transport, without harming the profitability of the

²²⁴ Fieldnotes [meeting nr. 18, appendix I]

²²⁵ Fieldnotes [meeting nr. 108, appendix I]

²²⁶ Fieldnotes [meeting nr. 84, appendix I]

²²⁷ Individual Visions on Sustainable Logistics [document nr. 51, appendix III], *translated by F.A.*

company. Our attention is concentrated on the reduction of emissions by using less fuel for each product unit that is transported.

[team-member 3]: The most important societal perspective at this moment is CO₂. With the depletion of fossil fuels in the future, the theme of energy-efficiency will without a doubt be added, but between those two elements there is basically a one-to-one relation. Other parties have other perspectives; air pollution (municipalities and VROM), animal well being and reducing the spread of cattle disease (LNV), spatial occupation (VROM), innovation (EZ / Synthens) and strengthening agro-clusters (LNV). It is good that we realize that when we build alliances, as long as we hold on to our own starting points: CO₂ and energy. That is clear and well marketable. (...) It is better to sell one aspect well and recognizably than to sell three aspects only half way.

[team-member 4]: (...) in a narrow sense it means that logistics has to be sustainable itself, i.e. use as little resources and energy as possible, and ideally even without the use of resources and also zero-emissions. This indeed means: compact, smart and efficient. It is not about 'look how we can save within the current logistical operations' but rather 'what do logistical operations have to look like to achieve zero-emissions'? Hence the challenge is: how do we get logistics emission-free in 2030? In a broader sense logistics can also contribute to sustainable development in other places on the chain. For instance, we can think of the development and application of new logistical concepts for the reuse of materials and product components.

[team-member 5] In my view the opportunity [of the ISL program] lies in connecting 'planet' and 'profit', which eventually benefits 'people'. But I think that our focus should not be on people; I think that we especially have the strength to connect planet and profit.

Based on the different individual vision documents, the manager and two project-leaders worked on a 'position paper' to formulate the vision of the ISL-program. This position paper referred to the definition of sustainable logistics that I had formulated in my own vision document: "sustainable logistics is organizing, planning, governing and transporting the flow of goods in such a way that as many people as possible can be provided in their needs as long as possible, without this harming other people or other life forms". However, right after this definition, the following was added:

This is a very broad definition that cannot be fully covered by ISL. In ISL the emphasis is on the profit and planet aspect of sustainability. The people aspect (e.g. driving hours or child labor) is not the primary focus of the program. This aspect can more effectively be taken up by other consortia, because it requires specific knowledge. There is awareness however, that if one aspect of the chain is not taken care off, the entire chain can be made accountable for that.

Again, we clearly see that ISL chose to focus on one specific aspect of sustainability; energy-efficiency and CO₂. Ironically, there is an inherent tension between *energy-efficiency and CO₂-reduction* on the one hand, and *transport efficiency* on the other hand. Famous examples are strawberries and apples, which were often mentioned in meetings

and interviews²²⁸. From a transport perspective, it would be more efficient to grow strawberries and apples in the Netherlands, rather than dragging them all the way from e.g. Israel or Latin America. However, the *energy* that is required to grow these fruits locally in green houses supposedly supersedes the energy used in transporting them over large distances. The conclusion drawn from these examples; locally grown food can still be more CO₂-intensive, i.e. 'unsustainable', than imported food, and therefore 'sustainable freight transport' should not be about reducing distances. This is illustrative for sustainable transport discussions that are focused on energy-efficiency. A hidden aspect therein is that the *current* energy system is taken as a starting point; the assumption that CO₂-emissions have a one-to-one relation with energy-use is based on the *current use of fossil fuels* (not on alternative energy sources with less/no emissions). Meanwhile the *other* negative impacts of long-distance transport are not taken in to account; spatial occupation, material use, subsequent resource depletion (vehicles, infrastructure), traffic accidents, etc. Through out the years, several projects were initiated in the ISL-program that went beyond energy-use and CO₂. Some of these projects took off (e.g. and urban distribution project), others remained in the explorative stage. In one project the possibilities of integrating Cradle-to-Cradle (C2C) insights in ISL were explored, but it was concluded that C2C was not sufficiently 'a logistical matter'²²⁹ (to be discussed in more detail in section 6.5).

Interestingly, even though most team-members were convinced that energy-efficiency and CO₂ were the most attractive and 'concrete' themes to mobilize business actors, some external advisors doubted that. In a discussion following the roundtable in June 2007, a management professor that was often involved in the program, argued that energy and CO₂ were in fact far too abstract, and that other themes – such as urban freight distribution, spatial planning, or infrastructure – were more directly linked to business interests. Although these debates were held internally, amongst team-members and with several advisors, the main 'external message' remained focused on energy-efficiency and CO₂. ISL ended up never formulating its own coherent vision on 'sustainable logistics', and the 'position paper' was never finalized (let alone published or presented to the outside world). Instead the focus was on doing 'concrete projects' with companies, and understanding why and when companies got interested in sustainable logistics (regardless of what that meant exactly).

6.2.5. (How) was transition management applied?

Contrary to the other case-studies on Transumo and the A15-project, ISL was not part of a 'transition program'. As explained in section 6.1.2, transition management was found interesting by the manager for the 'agenda-setting' and 'innovation' aspects of TEE/ ISL, and my involvement was explicitly categorized under these sub-projects. In the formal Connekt offer on how it would conduct the TEE/ISL program, transition management was (only) mentioned once, as follows:

²²⁸ Interviews ISL-team [interviews nr. 32-37, appendix II]

²²⁹ ISL Report over year 2008 [document nr. 38, appendix III] and fieldnotes [meeting nr. 111, appendix I]

In the set up of this subproject [agenda-setting] a connection was made with the experiences of the *Platform for Sustainable Mobility*. Also, there has been consultation with Prof. J. Rotmans of the Erasmus University of Rotterdam (transition management)²³⁰.

Transition management was however far more elaborately mentioned and referred to in the position paper, and in the project proposal for 'agenda-setting' (2007/2008). As explained earlier, however, the position paper and emerging vision document were never finalized nor published, and the 'agenda-setting' proposal was never approved (the subproject fell apart in separate activities that were later on referred to as 'strategic projects'). Nevertheless, it is interesting to consider how these documents referred to transition management, as it indicates how the members of the ISL-team perceived of it. In the position paper, transition management was referred to as follows:

(...) the essence is how society can realise sustainable logistics. Transition management differentiates two approaches: 1) the short term orientation in which one tries to realise progress within the existing system and vested interests and 2) the transition perspective (long-term perspective) in which the existing paradigms are replaced by new ones in which sustainability is one of the starting points.

In the short-term perspective there is still a lot to win, but the problem is not structurally solved. Rotmans speaks of further optimisation of existing systems according to current wishes. In the long-term perspective the problem is structurally tackled because one speaks of a complete redesign. This redesign is not realised at once, but results from many small steps that can be initiated by different parties.

The innovation program sustainable logistics contributes to the transition process through middle- and short-term solutions within a long term (transition) perspective. We try to make use of that which can still be improved in the current system, in order to acquaint businesses with the philosophy of sustainability and to couple this to existing themes. The improvement measures are focused on realising sustainability within the current economic, societal and institutional frameworks. Sustainability is brought in like the Trojan Horse²³¹.

Here it is emphasized that ISL aimed to contribute to a transition process, that the program was focused on the short-term, and that it would aim to find solutions '*within the current economic, societal and institutional frameworks*'. However, the project-leader of agenda-setting seemed to (want to) go beyond that, because in his project proposal for agenda-setting he stressed the following:

With the current paradigms of production and logistical management, existing institutions and rules of the game, the goals of Sustainable Logistics will probably not be realised (i.e. change in behaviour in thought and action regarding sustainability in logistics). In that case the scope of Sustainable Logistics remains limited to the reduction of vehicle kilometres within the existing logistical paradigm, in which products, consumer wishes, levels of

²³⁰ Connekt Offer 2007, p. 8 [document nr. 34 appendix III]

²³¹ Position Paper ISL 2007, p. 4 [document nr. 52, appendix III] *translated by F.A.*

logistical service, location choices for production and distribution centres, are not questioned. As such we need a leap in thinking and doing; a societal transformation²³².

Subsequently the project-leader referred to transition ideas and 'the transition management approach as developed by Professor Rotmans'. After discussing some of the principles of the transition management approach, he went on to specify the extent to which these were (not) integrated in the agenda-setting project:

In the subproject proposal agenda-setting, a few elements of the transition management approach are used without having the pretension that thereby the presented proposal for Agenda-setting is a full-fledged transition management process. Elements and starting points that have been integrated are: forming an innovation network of frontrunners that together can work on specifying the transition challenge, formulating problem perceptions and developing a vision on sustainable logistics, developing transition paths and starting pilot projects in which parts of this vision are realised. By doing so the majority of the steps in Rotmans cycle are followed. The limitation regarding transition management lies in the scope; 1) [ISL] is only one of the many fields of attention in achieving a sustainable society. The extent to which Sustainable Logistics can be realised is dependent on the speed in which sustainability is taken up by society as a whole and by businesses. 2) [ISL] is one of the ongoing initiatives that contribute to the whole transition process towards a sustainable society. In attachment 1 an overview is given of ongoing and finalized initiatives directed at the transition towards a sustainable society in the field of mobility and logistics. 3) [ISL] will take six years, while a transition covers a period of over 30 years²³³.

In the pages following the above excerpt, an extensive proposal was made for setting up networks and coalitions, formulating a vision for Sustainable Logistics in 2030, differentiating different themes (i.e. transition paths), setting up pilot projects, cooperating with other sustainability initiatives, and so on. Although this proposal as a whole was never carried out, some of the elements mentioned were taken up in the 'strategic projects' that followed (e.g. setting up a platform for Sustainable Procurement, cooperating with the Platform of Sustainable Mobility, rewarding frontrunners with the Green & Lean label, etc.). There were several reasons why the agenda-setting proposal was not carried out as a whole. Besides conflicting interests of the partners represented in the steering board (V&W, transport associations etc.), one of the reasons was that the agenda-setting proposal was found 'too conceptual' and 'not concrete enough', and that it was 'too much based on the assumption that it would be easy to get the right parties involved'. In practice it was difficult to get the right parties involved. It was believed that for a new program, it was better to take small, concrete steps with a few companies, focusing on concrete projects and clear CO₂-targets, rather than having the ambition to formulate a common future vision on sustainable logistics²³⁴.

²³² Project Proposal Agenda-Setting 2007, p.1. [document nr. 54, appendix III] *translated by F.A.*

²³³ Project Proposal Agenda-Setting 2007, p.2. [document nr. 54, appendix III] *translated by F.A.*

²³⁴ Phone conversation January 2010 with former project-leader agenda-setting

Despite of all this, the ISL program did have basic elements that corresponded with some of the more fundamental principles underlying transition management. The most important are 1) the (intention to) focus on frontrunners, 2) the involvement of 'outside' parties that were not directly part of the logistical sector (i.e. production companies rather than just transport operators), 3) (the intention to) spread a sustainability paradigm rather than just looking for technological or optimising solutions, and 4) the explicit aim to facilitate and stimulate the self-improving capacities of business rather than imposing government regulations.

However, there were also several stark contrasts between the set up of the ISL program and the TM-approach; 1) a hierarchical and formalised set up (steering board, controlling role of V&W), 2) the focus on planning, setting targets, and getting formal approval before getting on with projects (countless consultancy reports and endless rewriting of project proposals), 3) the primary focus on business actors (rather than also involving other societal actors), 4) the lack of a common, coherent future sustainability vision, and 5) the use of formal and external monitoring and evaluation, rather than self-monitoring. Many - if not most - of these aspects were inherent to the institutional context of the program, and it is questionable to what extent ISL could have 'freed' itself of that context (to be discussed further in the sections on power and empowerment). This however does not free us of the duty to specify what exactly would have been 'done differently' from a prescriptive transition management perspective. The aim of this exercise is not to evaluate ISL from a TM-perspective, but rather to analyze what it is that the TM-model exactly prescribes in theory, and how and why this can (not) be applied to practice.

Most obvious in this regard, was the way in which the round table was organized during the official kick-off of ISL in June 2007. The idea was that this round table would function as 'the first meeting of frontrunners', to be followed up by other meetings. Although I attempted to integrate as many 'transition management elements' as possible, the formal setting and external political pressure surrounding the round table, limited the possibilities to organize it as a transition arena meeting. Especially the expectation that the Minister of Transport Camille Eurlings would join the last half hour of the round table meeting (which in the end did not occur), caused a particular official and risk-averse attitude towards the meeting. The round table was attended by a total of seventeen individuals 'on the first row' and four individuals 'on the second row' (three team-members, including myself, and the external communication advisor). Besides the manager, the seventeen individuals included business actors (both shippers and carriers), public officials, representatives of an environmental NGO and a trade organization, the chairs of various platforms, one business management professor, and the director of Connekt. The manager was particularly disappointed about the outcomes of this roundtable, especially about the persistent stalemate between shippers and carriers²³⁵.

Theoretically, the prescriptive transition management model would prescribe that the entire set up of this roundtable, including both the selection of actors and the way in

²³⁵ Fieldnotes [meeting nr. 82, appendix I]

which the discussion was lead, should have been done differently. First, the meeting was attended not only by the program manager but also by the Connekt director and the director of V&W DGTL, and by a director of a municipal transport department. As such the participants were directly confronted with a total of five individuals that either ‘represented’ the government and/or were directly in charge of the ISL program. As such, most participants – especially the business representatives – did not speak freely on their personal behalf, on what they thought sustainable logistics to be. One of the business representatives (a construction company often commissioned by government for infrastructure projects) even literally said: “I’m sitting here at a table with a commissioning authority [V&W] so I have to be careful about what I say”²³⁶. In the thirteen interviews that were held with participants *beforehand*, plenty of controversial statements were made. In my analysis of these interviews, there were several points of disagreement between the participants, which could have been used as starting points to instigate debate and confront existing tensions. Instead, the discussion mostly consisted of the participants ‘making their points’, without them being deepened or confronted with each other. Even when participants did say something controversial, there was no time for a real discussion (as all the other participants also had predetermined points to make). For instance, after having stated that he ‘had to be careful’, the earlier mentioned business representative did actually bring up a controversial issue:

The construction sector is traditional, but so is our commissioning authority [i.e. V&W]. What do you mean ‘innovative, out of the box, and sustainability’? In calls for tenders [by government] it is not about that, it is only about Euros. (...) Why not integrate safety and sustainability in the [government’s] calls for tenders?

In response to that a government representative commented that “complaints that the government imposes too much are dangerous” and that “sustainability should rather be approached as an economic challenge”, after which another business representative went on to confirm that indeed there were enough positive drivers for sustainability. And thus the discussion about governmental hypocrisy in tender calls ended before it even started²³⁷. The same happened for other topics. At some point the representative of the environmental NGO mentioned that ‘there was a societal trend in which consumers demand sustainable products’. The chair followed up on this topic, asking about the changing demand in the market. The representative of V&W quickly responded that this was “a rather radical question that we want to avoid with this program”. In such way, the discussion was narrowed down rather than opened up, and radical elements were removed. Moreover, the round table was organized in three ‘thematic rounds’; 1) future vision, 2) sustainable logistics, and 3) role division, and all participants were invited to ‘say something’ on these themes. From a transition management perspective, a 2.5 hour session is hardly enough to meaningfully discuss any one of these themes, let alone all three. These three thematic ‘rounds’ would require at least three sessions; 1) problem

²³⁶ Fieldnotes [meeting nr. 81, appendix I]

²³⁷ Interestingly, in the initial phase of the program, there was also a subproject on transport efficient policy, including the sustainable procurement of logistical services by *government*. This subproject was removed from the program due to budget cuts.

perception, 2) future vision on sustainable logistics, and 3) strategies and coalitions, to be followed by thematic working groups that would focus on concrete pilot projects²³⁸.

As described earlier there was an intention to follow up on the round table. The manager, the project-leader of agenda-setting, the business management professor, and myself, reflected on the outcomes of the round table. We distilled the most relevant themes and discussed different strategies on how to engage with these themes, ranging from simulation games, role playing to participative scenarios, and selecting specific sectors and/or regions to apply the scenario exercises to specific cases. Besides the idea of a simulation game (which was developed and applied during a few events), none of these ideas were realised. Although some themes were covered by the 'strategic projects' carried out in 2008, these were not related to a common problem perception or sustainability vision.

One of the reasons why the intention to set up a participative envisioning process, (as explicitly mentioned in the agenda-setting project proposal), did not take off, also had to do with the unsuccessful search for a 'catalyst'²³⁹. The manager wanted to involve a 'catalyst', i.e. an individual that had the necessary authority, experience, knowledge, and charisma to lead, inspire and challenge a network of frontrunners, someone who spoke the language of business, i.e. a former director of a company, preferably "a shipper with logistical affinity"²⁴⁰. This search for a 'catalyst' was also mentioned in the agenda-setting project proposal. It seemed to be particularly difficult to find such individual, and this was mentioned as a problem on several occasions. During a team-meeting in the summer of 2007, it was literally stated that "as long as there is no catalyst we should keep it small" and that "the vision trajectory would be postponed until there was a catalyst"²⁴¹. To a certain extent, this search for an amazing individual 'to lead the network' *a priori* can be seen in contrast with the prescriptive transition management approach. From the perspective of transition management, the 'catalyst role' lies not with *one* individual but rather with the network of frontrunners as a whole. The transition *arena* process is especially designed to discover or even create a group of 'catalysts'. Which individuals are most willing and able to 'lead' is something that is manifested 'in action', during, and as a result of, the visioning process, not beforehand.

Last but not least, one can also question to what extent the 'frontrunners' referred to in the ISL-program corresponded to what transition management means by 'frontrunners'. Frontrunners were referred to as "business actors [shippers] that are already active in

²³⁸ In my transition management proposal for ISL I proposed five sessions: 1) challenges logistics (problem analysis), 2) sustainable logistics (future vision), 3) paths and strategies for Sustainable Logistics (transition paths), 4) networks for sustainable logistics (tactical transition coalitions), 5) getting on with Sustainable Logistics (formulating transition experiments). [document nr. 56 appendix III] *translated from Dutch*

²³⁹ Translated from the Dutch word 'aanjager', i.e. a leading figure who could represent the ambition of the program, inspiring, motivating and instigating others

²⁴⁰ E-mail dialogue 2007 [document nr. 57 appendix III]

²⁴¹ Fieldnotes [meeting nr. 88 appendix I]

corporate sustainability, but do not yet pay attention to sustainable *logistics*²⁴². When looking at the businesses that participated in the round table however, the majority of them were hardly sustainability frontrunners in their own sectors (with the exception of one particularly company). As pointed out by one of the project-leaders:

(...) we have to be more creative in finding solutions for the way in which we can still satisfy the customer. ***The companies at the table however still look in a business-as-usual direction when it comes to efficiency and sustainability:*** modal shift, ICT, driving hours, vehicle performance, etc. Of course these are important steps, but that is not enough if you really want to achieve the reduction that the cabinet wants. One should really think out of the box. You have to ensure that consumers will spend more time and money on services and products that require a little amount of transport. The question is whether for that you should sit around the table with logistical managers of carriers and shippers. It is ***better to do so with innovators of new products and services***. Ask them: “The consumer of the future will only go for CO₂-arme products and services, is your product still in there?”²⁴³

Although the actors that participated in the round table were not ‘usual suspects’ in terms of logistical service providers or representatives of transport sector interests, their ‘frontrunner status’ in their *own* sector was questionable. Moreover, the strong focus on business in itself undermined the idea of confronting participants with different societal backgrounds. Even though the round table involved one representative of an environmental NGO, and one professor, this was hardly enough to counterbalance the other 15 participants representing business and government. Rather than having a societal debate on sustainable logistics and creating a common vision that was also supported by ‘civil society’, the program mainly seemed to be a dialogue between government and business, followed and supported by *one* environmental NGO and several public-private platforms. To be fair, it must be acknowledged that logistics and freight transport are particularly difficult themes to involve ‘civil society’. We come back to this in the section on empowerment and transition potential. Moreover, it must be emphasized that the literature on the prescriptive transition management model, (and as such my capacity of communicating this in my role as advisor), was insufficiently specific on how to identify and involve ‘frontrunners’ from various sectors. We come back to this in chapter 8.

6.3. POWER IN SUSTAINABLE LOGISTICS

6.3.1. Which resources are mobilized?

The ISL-program primarily mobilized human, monetary, and mental resources to achieve its goals. The development of measuring instruments and web-applications (e.g. Digiscan, CO₂-measuring scale) can be counted as artifactual resources, but besides that, artifactual resources were not directly mobilized (e.g. technology, infrastructure, products, etc). In

²⁴² Vision Document, p. 8 [document nr. 53 appendix III]

²⁴³ E-mail reflection on round table by ISL team-member [document nr. 58 appendix III] *emphases added*

terms of Mann's typology of power (see chapter 3), ISL exercised ideological, political, and economic power. Moreover, the emphasis was on mobilizing business actors (i.e. human resources). To a great extent this was done through the mobilization of mental and monetary resources but, as explained earlier, ISL overtly aimed *not* to be a subsidy program or a research program. In terms of the typology of power resources as presented in chapter 3, this can be characterized as follows. While a subsidy usually implies giving actors money to do something (which they would otherwise not do), ISL mobilized money in a more 'indirect' manner, by paying consultants, experts, project managers, etc., to develop instruments, concepts, and ideas that could mobilize business actors. As for not wanting to be a research program, this implied that the mobilization of 'mental resources' was not focused on the collection and dissemination of scientific information, but rather on the development and communication of ideas and practical concepts that could attract the interest of business (i.e. mental resources that could mobilize human resources).

6.3.2. Which types of power are exercised?

The exercise of *innovative* power in ISL consisted mostly of developing new mental resources: 1) an 'ideal' on sustainable logistics based on linking logistical efficiency to energy efficiency, accompanied by 2) practical concepts and instruments (e.g. web-applications Digiscan and CO₂-measuring scale). By doing so, the idea was that ISL would stimulate business actors to exercise innovative power. The ISL-program itself was more focused on exercising *transformative* power; developing new institutions and new organizational structures, e.g. promoting a new paradigm on sustainable logistics, and developing new criteria and standards for the procurement of logistical services. At a broader level, ISL also aimed to develop new institutional structures for the relation between government and industry, moving away from imposed regulation towards the self-improving capacity of business (facilitated by government).

On the other hand, seeing the parties represented in the steering board, the other partners involved in the program, and the controlling role of V&W, it can be argued that ISL exercised *reinforcive* power in terms of reproducing hierarchical structures and reinforcing the position of government departments, transport associations, and trade-organization. Moreover, despite of its engagement with the new 'sustainability paradigm', ISL confirmed several 'old' paradigms prevailing in the logistics sector, i.e. the economic importance of freight transport, the focus on optimization and efficiency, and the 'servant' attitude towards the demands of industry (i.e. carriers serve the need of shippers). Rather than questioning these paradigms, the strategy was to confirm these paradigms and to argue that sustainability could 'go together' with these paradigms. As explicitly stated in documents; "the improvement measures are focused on realising sustainability *within the current economic, societal and institutional frameworks*"²⁴⁴ and "the economic context is not a point of discussion"²⁴⁵.

²⁴⁴ Position Paper 2007, p.4 [document nr. 52 appendix III] *emphasis added*

²⁴⁵ Individual vision document 2007, p.3 [document nr. 51 appendix III] *emphasis added*

6.3.3. What are the power dynamics?

ISL explicitly aimed for *synergetic* power dynamics with both government and industry. ISL aimed to enable and enforce the power exercised by other organizations, and visa versa, it tried to use ongoing political developments to boost the outreach of its own program. In team-meetings, much time was spent on discussing new political developments and what these meant for ISL; new governmental policies, departmental reorganizations, and ongoing 'sector agreements'. In the preparation of the ISL-program, and in the Connekt offer, synergetic power relations were explicitly integrated, and it was argued that agenda-setting was primarily a matter of *agenda-matching*:

Agenda-setting here is not meant in terms of sending a one-sided message (...), but rather matching the TEE-agenda with the agendas of 'target groups', with other words bilateral and demand driven. In this regard it is better to speak of *agenda-matching*.²⁴⁶

To a certain extent ISL let itself be 'used' by the government's freight transport department to profile its attention for sustainability. During team-meetings it was literally stated that "V&W DGTL want showcases, and we will become the show case of DGTL"²⁴⁷. During one of V&W's largest 'innovation event', ISL was presented as a 'show case' in the logistics department²⁴⁸. At the same time ISL team-members were critical about how their program was used by other parties and aware that even though ISL was not intended as a subsidy program, many parties still perceived ISL in this way. As formulated by the manager in an email to the ISL-team:

Since the 26th [June 2007, official kick-off] I am often approached by companies, institutions and consultants that see us as a pot of gold shining at the horizon. Some ideas are pretty good and also seem to fit within the program. (...) I have developed the following criteria which need to be met [by initiatives] in order to be eligible for a financial contribution [from ISL] (...):

- the program does not contribute more than 50%, with a maximum of... (?)
- the partners involved also need to invest in the project
- there should be added value for the program
- partners need to be prepared to share knowledge and experience with the program (disclosure)
- V&W (my commissioner) needs to approve²⁴⁹

The manager was careful about which other initiatives the ISL program would enable, and he explicitly invited other team-members to be so as well. During team-meetings this was an important point of discussion; how to avoid that ISL would be (ab)used for subsidizing, window-dressing, or pure commercial purposes that had no link with ISL's sustainability ambitions. For instance, it was discussed that certain parties wanted to abuse the

²⁴⁶ Connekt Offer 2007, p.8 [document nr. 34 appendix III]

²⁴⁷ Fieldnotes [meeting nr. 51 appendix I]

²⁴⁸ Fieldnotes [meeting nr. 97 appendix I]

²⁴⁹ Email manager 2007 [document nr. 59 appendix III] *translated by F.A.*

Digiscan, either for government regulation or consultancy purposes²⁵⁰. Regarding the branch-cooperation it was noted that “there is a danger that this part of the program is used by participating businesses only for tracing and implementing logistical improvement (=lower costs) while the societal component remains in the background”²⁵¹.

The question is which types of power exercise ISL did enable. On the one hand, it can be argued that ISL enabled the exercise of transformative power by business actors, by providing practical instruments and a platform for these business actors to develop new logistical practices (e.g. criteria for procurement of logistical services based on sustainability concerns). On the other hand, ISL also enabled and reinforced the exercise of reinforcing power by both government and business, in terms of reproducing hierarchical structures, reinforcing the position of government departments, providing a platform for transport associations and trade-organization, and confirming prevailing transport paradigms (as discussed in the previous section).

There were little to no *antagonistic* power dynamics between ISL and its societal context. ISL did not directly resist or disable power exercised by government or business, neither within the program nor in the sector. Although criticism towards the government and industry was voiced in internal meetings, this was not communicated externally. Even though ISL provided a platform for discussion, this was mainly directed at a *constructive, positive, and solution-oriented* dialogue between business actors and government representatives. As elaborately described in section 6.2.5, the ‘kick-off’ round table in June 2007 did not provide space for fierce discussion, and comments that could qualify as ‘antagonistic voices’ were not followed up.

6.3.4. Which power relations can be distinguished?

Having discussed the synergetic relation that ISL had with government and industry, we now move on to other types of power relations, between ISL and other similar initiatives, and within ISL’s internal dynamics. In this regard it is interesting to note that the distinction between ‘internal’ and ‘external’ relations was unclear in the case of ISL, especially regarding V&W and Connekt. V&W being the ‘commissioning authority’ of ISL, and Connekt being the organization that conducted the program, these could in principle be considered as ‘internal actors’. However, in team-meetings V&W and Connekt were often referred to as ‘outsiders’, which they technically were in relation to ISL’s management-team. In other words, it was unclear who exactly ‘owned’ the program, and one could even speak of a certain ‘power struggle’ in this regard. This also complicated the positioning of ISL towards other partners (business actors and other public-private initiatives). As described in the vision document:

(...) a complicating factor is that sustainable logistics is a theme that has been initiated by the government. This challenges the equality between partners in the network. Especially when companies need to be convinced of the usefulness and necessity of sustainability

²⁵⁰ Fieldnotes [meeting nr. 108 appendix I]

²⁵¹ Individual vision document 2007 p. 3 [document nr. 51 appendix III] manager translated by F.A.

logistic. With a lot of companies this latent need for sustainable logistic still needs to be awakened, and then [ISL] is pushed into the role of 'Evangelic preacher'. Developing a sense of urgency and responsibility amongst parties involves is an important function of [ISL]. Both carrier and shipper need to be penetrated of the fact that they can contribute to an improvement of energy-efficiency in the chain. Because of her position within Connekt, [ISL] stands closer to the market than a government organization, but without losing its contact with the government²⁵².

Even though Connekt was mentioned as the formal organization conducting the program, initially the ISL-program seemed to function relatively separate from Connekt. Although ISL shared Connekt's facilities, including its administrative support, it had its own team-meetings, logo, budget, and communication strategy. Initially, there also seemed to be relatively little communication and interaction between ISL-team members and other Connekt-employers, who mostly worked on other programs and projects. This was often mentioned as a problem, during team-meetings and also in the evaluation by an external advisor. As such in 2008 it was decided to integrate ISL more deeply in Connekt:

Within Connekt the Innovation Program Sustainable Logistics has received a separate place. Also to the outside world the innovation program is communicated separately. This appears to complicate the communication. Because of this, this 'separate status' has been changed in the year 2008. The program is now and included as an integral part of Connekt. Connekt intends to spread the theme [i.e. sustainable logistics] amongst its members, also after the program has been finalized²⁵³.

In 2009 and 2010 this 'integration within Connekt' was brought even further, as the manager was replaced by a Connekt-manager and 'placed more closely under the supervision of the Connekt-director'²⁵⁴. It would be interesting to study whether the new program has also taken more distance from V&W in the mean while, (which was the whole point of positioning it in Connekt in the first place). However, this case-study focuses on the years 2006-2008, and then it was observed that ISL was highly dependent on V&W. As will be discussed in more detail in section 6.4.4, the power relation between ISL and V&W was mostly one of 'one-sided dependence', in the sense that ISL was more dependent on V&W than the other way around. Especially the rotation of departmental directors, V&W's seemingly never-ending reorganization and new policy priorities, caused much confusion and insecurity within ISL regarding the support of V&W. This was often brought up in team-meetings and informal conversations²⁵⁵.

Surely, it could be argued that V&W also 'needed' ISL as a 'show-case', but the level of this dependence was relatively low, as there were numerous other platform, committees, and programs dealing with the challenges of transport and logistics. Most illustrative in this regard was the *Committee van Laarhoven*, a hot shot committee (traditionally named after its chair) dealing with knowledge innovation in logistics and the economic position of

²⁵² Vision Document 2007, p.5 [document nr. 51 appendix III] concept *translated by F.A.*

²⁵³ ISL report over year 2008, p.17 [document nr. 38 appendix III] *translated by F.A.*

²⁵⁴ Phone conversations ISL team-members January 2010

²⁵⁵ Fieldnotes [several ISL meetings, appendix I]

the logistical sector. During V&W's largest public innovation event²⁵⁶ in 2007, the *Committee van Laarhoven* received a prominent place on the plenary stage, on which it presented 'an innovation-agenda for logistics' to the physically present Minister of Transport. Although ISL had also been framed as a 'show-case' for V&W, it was striking to notice the significantly lesser prominence with which it was presented in one of the parallel sessions. Interestingly the *Committee van Laarhoven* was also (administratively) placed under Connekt. Although it would go too far to argue that there was a competitive relation between ISL and the *Committee van Laarhoven*, there was no cooperation between the initiatives, thus best characterizing this relation as a 'co-existing' one.

Overall, however, the ISL-team invested a large amount of time and energy in recognizing other initiatives and organizations, and in most cases also (trying to) cooperate with them. In the preparation of the program in 2006, an extensive consultancy report was commissioned that provided an overview of all initiatives and programs that seemed relevant for ISL (TEE at the time), indicating points of overlap and possibilities for cooperation. Through out 2007 and 2008, ISL closely followed ongoing initiatives regarding the sector. This was necessary, as ISL wanted to position itself as a platform 'in between' government, industry, NGO, and research:

The work terrain of [ISL] finds itself in between various different parties; market, government, NGOs and research institutes. In this field ISL provides an independent platform that aims to get things in motion, **without an own power position, and within a niche where nobody is the boss**. This is done on the basis of the wishes and motives of the various parties involved. It should however be mentioned that the initiative to get things in motion originated in the government²⁵⁷.

Both manager and project-leaders were continuously 'on the road' for bilateral negotiations with other organizations and initiatives, the outcomes of which were elaborately discussed in ISL team-meetings. Often these bilateral meetings seemed to be particularly challenging. One of the things that stood out was the recurring comment that 'SenterNovem saw ISL/ Connekt as a competitor', and that ISL needed to avoid 'doing double work' or 'getting in the way' of other initiatives²⁵⁸. Especially regarding the 'visioning' aspect of the agenda-setting project, it was emphasized that one should watch out for 'competing visions' on sustainable logistics, referring to *Transumo* and the *Platform for Sustainable Mobility*. A complicating factor was the 'sensitive' relation between Connekt and *Transumo*²⁵⁹ (see chapter 4) and between V&W and the *Platform for Sustainable Mobility* (hereafter referred to as PDM – the Dutch acronym). The latter had to do with the fact that PDM was part of the energy transition, which despite of its 'interdepartmental' status was mostly coordinated by EZ (i.e. 'not invented here' for V&W) (see *Intermezzo A on Transition Discourse and Sustainable Mobility*).

²⁵⁶ Fieldnotes [meeting nr. 97 appendix I]

²⁵⁷ Concept vision document, p. 3 [document nr. 53, appendix III] *emphasis added*

²⁵⁸ Fieldnotes [meetings nr. 51, 54 and 90 appendix I]

²⁵⁹ Fieldnotes [meeting nr. 66, 99 and 105 appendix I]

Despite of all these complications, ISL managed to cooperate with numerous other organizations, platforms and initiatives, including PDM. In a way there was no choice but to cooperate with PDM, as this was an ignorable partner regarding energy-efficiency, CO₂, and the related intention to reward industry with 'green labels'. Initially, PDM had relatively little attention for logistics (as it was primarily focused on passenger transport and fuel technology), but over the years PDM got more involved with freight transport/logistics, especially regarding CO₂-emission trading²⁶⁰.

At the beginning of 2008, the government's *Clean & Efficient* policy was getting worked out for traffic and transport, and the chair of PDM was more or less 'leading' this. In the beginning this happened without ISL being included in the discussions, but as many of the ISL stakeholders (e.g. trade-organizations represented in ISL's steering board) were involved, meetings were planned between ISL, Connekt, and a representative of PDM to discuss cooperation²⁶¹. Hence, at this stage the involvement of PDM in logistics still seemed to stand at a relative distance from ISL. This also may have had something to do with the chair of PDM, who had participated in the ISL roundtable in June 2007, and had been disappointed by the outcomes. The PDM chair claimed that he had tried to form partnerships with some of the round table participants, but that they did not seem interested, and that the mobilization of industry by ISL was too slow for his taste²⁶².

However, through out 2008 the ties between ISL and PDM were strengthened. In a team-meeting in the summer of 2008, it was reported that the chair of PDM was assigned to 'build bridges' between ISL, PDM, and industry²⁶³. A freight transport-oriented representative of PDM also participated in the study-trip to London organized by ISL. Moreover, in 2008 the ISL-team was joined by a V&W public official that was specialized in innovation networks and strategic coalition building²⁶⁴. In a way, this individual replaced the project-leader of agenda-setting and innovation (who left a few months later), and he was especially assigned to strengthen the links between ISL and other networks.

At the beginning of 2010 this same individual stated that the 'new' restructured ISL program went 'more in the direction of PDM' – i.e. 'rewarding' frontrunners for CO₂-reduction – and that there was more cooperation with these and other similar initiatives. In terms of the typology of power relations, we can conclude that throughout the years ISL was continuously *balancing between co-existing and cooperative relations, and avoiding competitive relations*. Regarding dependence relations, ISL was initially very dependent on V&W, but it seems that eventually ISL became more dependent on Connekt and less on V&W.

²⁶⁰ See more about this in Intermezzo I on *Transition Discourse and Sustainable Mobility*

²⁶¹ Fieldnotes [meeting nr. 108 appendix I]

²⁶² Interview nr. 57 appendix II

²⁶³ Fieldnotes [meeting nr. 123 appendix I]

²⁶⁴ Interview nr. 67 [appendix II]

6.4. EMPOWERMENT IN SUSTAINABLE LOGISTICS

6.4.1. How and to what extent are the conditions of power met?

The ISL-program had an elaborate and varied access to resources, strategies, and skills. ISL combined a wide range of strategies to mobilize resources and realise its goals, ranging from workshops, bilateral negotiations, presentations at conferences, articles, newsletters, press releases, interactive web-applications, and so on. ISL project-leaders had extensive transport expertise, work experience, and network connections. As far as team-members lacked certain skills (e.g. website programming or detailed CO₂-calculations), external professionals were hired to do the job. Several research institutes and consultancies were involved in the set up and development of the program. As for PR, ISL hired several communication advisors, text writers and other external professionals for the development of its website (one for graphic design, one for textual content, and one for programming). Besides all this, ISL also explicitly aimed to *transfer* resources, strategies, and skills to other actors, which was part of its ambition to provide the sector with the necessary means to realise sustainable logistics. It was believed that the necessary skills and expertise were lacking in the sector:

It has been demonstrated that the innovation advisory organization Syntens of the Ministry of Economic Affairs (EZ) lags behind in advising companies in the field of logistics. In company evaluations, logistics is not brought up at all. This is why an agreement has been made with Syntens to cooperate on improving the expertise of Syntens advisors – during a test period in 2007 and 2008. For this purpose use is made of a [logistics] course [provided by ISL]. In 2009 Syntens will evaluate a total of 125 companies on their logistical performances²⁶⁵.

As such ISL facilitated the logistical training of consultants and advisors, and it also contributed to logistical expertise in higher education. An education module was developed for a short course on logistics for company directors. Besides training and education, ISL developed (together with other organizations) accessible manuals and instruments to be used by business. The *Digiscan* and *CO₂-measuring scale* were two examples, but there were several others, such as the CSR-benchmark, the environmental-performance-indicator and the environmental-dashboard²⁶⁶.

Regarding the access to resources within the ISL-program, it is interesting to note that the external advisor that was involved at the beginning of 2008 (see section 6.1.2) argued that perhaps ISL had *too much* access to financial resources, i.e. that its budget was too large. He argued that “sometimes it is better to have few resources” because “it forces one to look for other resources, which often provides new energy”, and that a large public budget (i.e. government financing) also implied “the danger that ISL becomes a kind of niche-like *Senter Novem*”²⁶⁷. This is interesting in the context of the power framework, for

²⁶⁵ ISL Report over year 2007 p.5 [document nr. 37 appendix III]

²⁶⁶ ISL Report over year 2007, p.8 [document nr. 37, appendix III]

²⁶⁷ External Evaluation 2008, p.8 [document nr. 62 appendix III]

it implies that an excessive access to one resource (i.e. money), can undermine the search for other resources, and that this can be at the cost of another 'condition of power', i.e. the willingness to mobilize (other) resources to achieve one's goal. Moreover, the access to public resources also brings along hierarchical structures that can hamper empowerment. I discuss this further in the next sections.

6.4.2. What is the level of intrinsic motivation?

Most ISL-team members were highly motivated individuals. In fact, some of them were the most motivated personalities I encountered during my fieldwork in the Dutch transport sector. They were all intrinsically passionate about logistics, and most of them also seemed to have intrinsic sustainability ideals. However, this section is not about discussing the individuals' motivation in general, but rather about analyzing the positive/negative task assessments as observed in ISL (sense of impact, competence, choice, and meaning). Obviously individuals differed in many ways, but a few commonalities can be found when analyzing common aspects that inherently impacted task assessment. In the case of ISL, task assessment was to a very large extent (negatively) impacted by the *hierarchical context*. As this will be discussed extensively in section 6.4.4, here I will only refer to that shortly, and focus more on other aspects of task assessment.

Let us start with the *sense of impact*. Team-members believed that the ISL-program could make a significant difference in the logistical sector, as was reflected in the formulated ambitions. They believed they were doing something new and relevant, and/or that they were doing things differently and better compared to previous programs. The set-up of ISL was based on lessons learned from several previous programs, in which 'having more impact' was an important point of attention²⁶⁸. As far as other initiatives seemed to have more 'success' in terms of getting more explicit government publicity (such as the *Committee van Laarhoven*), ISL team-members were aware that such 'prestige' was something different from having actual impact (see section 7.3.4). Although there was much investment in the PR of ISL, team-members were primarily focused on actually doing something that was worth communicating. One of the things that distinguished ISL from previous and parallel logistics programs, was the focus on energy-efficiency, and on the demand side (shippers rather than carriers). On the one hand, this increased the sense of impact, as energy/CO₂ seemed to be a societal and political priority, and shippers seemed to have more influence in industry than carriers. At the same time, however, this orientation also decreased the sense of impact, because it made ISL very dependent on 'developments beyond their reach'. The continuous discussion about agreements and negotiations involving other initiatives and organizations (e.g. the *Platform for Sustainability*) often seemed to question whether ISL was making enough of a difference.

This also related to the *sense of competence*. Although ISL-members were confident about their logistical expertise and overall project management skills, there seemed to be insecurity regarding their *own* abilities to build networks, mobilize business actors, initiate

²⁶⁸ See section 7.1.2. on the extensive preparations of the TEE program

envisioning processes etc., especially at the more strategic levels. I observed that in the tendency to look for external parties to realise ‘the agenda-setting goals’, such as the unsuccessful search of a ‘catalyst’. Apparently, the ISL-members believed that they did not have the necessary authority or charisma to function as ‘catalysts’ *themselves*. This was also reflected in the tendency to meticulously plan and research proposed activities, and to get these ‘approved’ before getting on with them. Obviously this also had to do with the hierarchical setting. The controlling role of V&W, and other partners in the steering board, seemed to cause a significant amount of insecurity and risk-avoidance (to be discussed in more detail in section 6.4.4).

This same hierarchical structure also negatively impacted the *sense of choice*. In principle the set-up of the ISL program, being at Connekt and consisting of several sub-projects, provided relative freedom to the ISL-team regarding their activities. Project-leaders wrote their proposals, and conducted their activities, according to their own insights. However, this freedom seemed to be limited to the *internal development phase*. As soon as things reached the point of entering the external world or reaching the target group, the steering board and other external partners seemed to form an obstruction. This was not constructive for the sense of competence and choice amongst ISL’s team-members.

The most problematic task assessment seemed to revolve around *a sense of meaning*. The problem was not that ISL’s ambitions did not seem meaningful, but rather that there often seemed to be confusion about how different ambitions related to one another. This especially concerned to the *fragmentation* of the project in different subprojects. This challenge was explicitly discussed during the team-bonding sessions in the summer of 2007²⁶⁹, but it was still an issue at the beginning of 2008. The external advisor that was hired around that time, stated that the team ‘lacked passion and coherence’, and that project-leaders were too focused on ‘doing their own thing’. At the end of 2008 this still seemed to be an issue, as can be observed in the following statement in the 2008 report:

The different team members are occupied with specific parts of the program. In the mean while the program team has started to emphasize the coherence between the several subprojects.²⁷⁰

It was as if ISL was having a continuous ‘identity search’²⁷¹, either because the team was not really a team yet, or because the coherence between the different projects was lacking, or because ISL was struggling with its external message. Many project-leaders and other team-members were mostly busy doing their own thing, i.e. conducting subprojects and other assigned activities. Team-meetings - 2 hours every two weeks – were often filled by everyone reporting these different activities. As such the only one safeguarding the coherence of the program was the manager, but he was also pre-occupied with numerous obligations and meetings (and dealing with the hierarchical and institutionalised setting). As a result, a *shared* sense of meaning at the overall program

²⁶⁹ Fieldnotes [meeting nr. 82 appendix I]

²⁷⁰ ISL Report over year 2008, p.38 [document nr. X appendix III] *emphasis added*

²⁷¹ Note: in the years 2007 and 2008, when I was involved

level seemed to be lacking. To a certain extent, this was an inevitable result of the fragmented and hierarchical set-up of the program, both of which obstructed the creation of a shared sense of meaning in the ISL-team. However, in my view it also had to do with a lack of *substantive* discussion, and the (resulting) lack of a coherent vision on what *sustainable logistics* was supposed to mean.

As mentioned earlier, for the team-bonding session in the summer of 2007, all team-members wrote down their individual opinion on what they thought sustainable logistics to be. However, in the following session there was little substantive discussion about the different views. In the same document we were also asked to specify what we thought the best 'strategy' to be for ISL to position itself. As a result, the discussion in the following session was mostly about how the team functioned and how it presented ISL to others. During these sessions, team-members agreed to start organizing content-oriented team-sessions every two other weeks, in which they could deepen out different themes related to sustainable logistics. This plan however was not realised, at least not in the time that I was involved. As such we had a situation in which ISL team-members were focused on *how* to promote sustainable logistics – what to focus on, how to approach business etc. – not on *what* sustainable logistics was, nor on *why* this was so important. Of course, this is understandable, as ISL aimed for a practical approach, not for philosophical or ideological understanding. The point is, however, that this lack of a commonly created vision on sustainable logistics had a negative impact on the (shared) sense of meaning. Indirectly, this also limited the functioning of the team in spreading the ISL-message; for how can one 'go on a mission' without knowing what this mission is? In my view this was the main reason for the lack of 'team-spirit' and 'passion' that the manager (as well as the external advisor) seemed to miss.

6.4.3. Which interpretative styles prevail?

As discussed in chapter 4, intrinsic motivation depends on positive task assessments, which in turn depend on individuals' interpretative styles; the way in which they *attribute* cause and effect, *evaluate* success and failure, and *envision* future events (and their own role therein). Obviously, such interpretative styles differ for each individual, but a few observations can be made about the interpretative styles that seemed to prevail within ISL. Most team members were critical thinkers with much transport expertise and work experience, and they all seemed to combine a genuine wish to make the sector more sustainable with a pragmatic approach towards making the program succeed. We saw this reflected in a few 'common' interpretative styles.

To start with *attributing cause and effect*, there was awareness about the inherent contradictions and complexities of 'sustainable logistics', such as the tension between transport-efficiency and energy-efficiency (e.g. the apples from South Africa and the strawberries from Israel, as discussed in section 6.2.4). Due to this complexity, there seemed to be a doubtful and relativist attitude towards 'scientific truths' regarding sustainability; whether a product can be considered sustainable or not depends on such large amount of factors, that it is almost impossible to 'calculate' this. At the same time, there was a strong belief underlying ISL that it was necessary to 'help' *business actors*

'attribute cause and effect' regarding sustainable logistics. This was not so much based on spreading information or scientific facts, but rather on spreading *awareness* (about societal developments) and practical tools that provided *pragmatic* insight (e.g. Digiscan and CO₂-measuring scales). In terms of attributing cause and effect; it was believed that what could *cause* behavioral change amongst business was not so much scientific information, but rather societal awareness and pragmatic insight on energy saving as a business case. Regarding the dissemination of awareness, many team-members posed the question: *why and when* do *business* actors get interested in sustainability, and *how* do we facilitate this? There seemed to be more curiosity and interest for that question than in the question *what* sustainability was. As illustrated in the following comments:

[team-member x]: Compact, smart and economical. A good thought! We definitely have to hold on to it, but we must make sure we do this in the right way. This slogan expresses *how* we want to save [energy], but not *why* the receiver of our message has to undertake many complicated things in his company in order to strive for a goal that cannot be clearly delineated before hand.

[team-member y]: At this moment, sustainability is so central to society, that it is no longer a discussion *why* we should promote sustainability, but rather *how* we have to do that. Our answer to that is that we will promote sustainability in logistics by helping companies to design their logistics in a compact, smart and economical manner. We help companies to do that, regardless of whether their motivation is based on positive thought or fear²⁷².

Moving on to *evaluating success and failure*, the way in which success and failure was interpreted in ISL was highly dependent on the hierarchical context, with all its external supervision and monitoring. We come back to that issue in the next section. Here I want to discuss another aspect, namely the discussion about 'hard' and 'soft' targets. The position paper explicitly posed this question: "do we want to fixate ourselves on 'hard' target for the program?"²⁷³. These 'hard' targets mainly referred to quantitative targets on CO₂-reduction. There was discussion whether and to what extent ISL should specify such quantitative targets for its own output, something which V&W did not want. The position paper is interesting in this regard for it demonstrates how ISL aimed to combine both 'soft' and 'hard', 'short-term' and 'long-term' targets, and to combine a strategic approach (go along with political ambitions) with a pragmatic approach (realistic for business). This raises the question on what basis the success of reaching the 'soft', 'long-term', and 'strategic' targets was evaluated, since these could not depend on quantitative measurements. It seemed that this was mostly based on the extent to which external partners (members of steering board and business partners) seemed to be 'interested'. For instance, we see this in the decision to not follow up on the theme of Cradle to Cradle: "ISL gave up on this *after* the business partners stated that they were not interested"²⁷⁴.

²⁷² Individual vision documents 2007 [document nr. 51 appendix III]

²⁷³ Position paper 2007, p.5 [document nr. 52 appendix III]

²⁷⁴ ISL report over year 2008 p. 11 [document nr. 38 appendix III] *emphasis added*

This also relates to the way in which *future events were envisioned*. As indicated in previous sections, there was much discussion about ongoing political developments, and a high level of uncertainty (and subsequent insecurity) about the (near) future of political agreements. In interviews with both business partners and ISL team-members, the unpredictability of government policies was mentioned as a problem for a successful dialogue with industry, as it made the government ‘untrustworthy’. As such, ISL balanced between going along with political discourse on the one hand, and adapting to business discourse on the other hand. Either way, ISL’s envisioning of future events seemed to primarily be *trend-following*, rather than trendsetting: “the extent to which Sustainable Logistics can be realised is dependent on the speed in which sustainability is taken up by society as a whole and by businesses”²⁷⁵. Another interesting observation regarding the envisioning of future events, is the way in which ISL distanced itself from transition management: “the limitation regarding transition management lies in the scope (...) [ISL] will take six years, while a transition covers a period of over 30 years”²⁷⁶. Therein it is implied that the duration of a management *process* (i.e. a six year program), limits the temporal scope of its *substantive* ambition (i.e. a 30 year transition). I will discuss this temporal issue – and the challenges that this posed for project and programs under study – in more detail in chapter 8 on transition management.

Last but not least, the interpretative styles in ISL were affected by the (inherent) contradictions between sustainability discourse and prevailing logistics discourse;

The sustainability element was added to the program by the government during the process. Because of that, two concepts were united that have a certain mutual resistance to one another. Traditionally, logistical concepts have another orientation than sustainability. In logistics it is about ‘just-in-time’, speed, connections between elements that are driven economically – logistical actors think in completely different ways from sustainability concepts²⁷⁷.

Although ISL aimed to tackle these contradictions, by showing how efficient logistics and sustainable concerns could be brought together, the prevailing economic orientation in logistical discourse still seemed to capture many of the ISL-team members. I observed this in the way some of the team-members defined sustainable logistics:

[team-member x]: Sustainable logistics is that societal actors – business and government – steer and process natural resources and freight flows *in a economically optimal manner*, so as to achieve the government aims of 30% less CO₂-emissions.

[team-member y]: Sustainable logistics is organizing freight transport flows *for the lowest costs possible* and in such a way that one can provide transport needs in the Netherlands on the long term with the least environmental damage and spatial occupation²⁷⁸.

²⁷⁵ Project Proposal Agenda Setting 2007 p. 1 [document nr. 54 appendix III]

²⁷⁶ Ibid, emphasis added

²⁷⁷ External evaluation 2008, p. 7 [document nr. 62 appendix III] *translated by F.A.*

²⁷⁸ Individual vision documents 2007 [document nr. 51 appendix III] *translated by F.A.*

The contradiction in these definitions lies in the explicit inclusion of ‘lowest possible costs’ and ‘economic optimization’; these are mentioned as part of sustainable logistics, while at the same time these are often mentioned as exactly that which *hampers* sustainable logistical practices (as elaborately discussed in section 6.2.4). These texts also indicate that sustainability was mainly interpreted in terms of achieving *both* economic and environmental goals, without explicitly discussion how these two goals contradicted one another. As I formulated in my own vision document for ISL: “in most definitions and descriptions of sustainability (...) the inherent contradictions and trade-offs are ignored. One speaks in terms of a ‘balance’, fulfilling one aims without this being at the cost of another aim, as much positive side-effects as possible and the least negative side-effects, etc. In this context, sustainability is approached as some sore of peaceful end vision. Sustainable development, however, the process of getting closer to that end vision, is all about making priorities, difficult trade-offs and painful choices”. In the analysis and proposal that I wrote at the end of 2007, I argued that ISL needed to explicitly discuss the *tensions* between the economic, environmental, and social aspects of sustainable logistics. In my view this was not so much a truth-seeking exercise, but in fact a ‘pragmatic’ and ‘realistic’ attitude towards the sustainability concept. For the interviews with business actors demonstrated that business actors themselves struggled *in practice* with the tension between people, planet, and profit²⁷⁹. As such a ‘practical approach’ also required a practical way of dealing with these given tensions. However, it seemed that most ISL team-members found that the discussion about the inherent contradictions of sustainable logistics would hamper the communication of a clear message, and distract from a pragmatic and concrete approach.

6.4.4. To what extent is there a culture of empowerment?

In previous sections, I often referred to the hierarchical context of ISL. Before we go on to discuss the specifics of this hierarchical culture, it is necessary to acknowledge that ISL also had several aspects of an ‘empowerment culture’ (see chapter 3, section 3.3.2), both in its internal organization and in its approach towards industry. In the latter the focus was explicitly on ‘partnering for performance’ (rather than command and control by government), and on visioning (rather than mere planning). Internally, ISL was set up in terms of self-directed projects (rather than centrally directed workflow processes), and ‘team-members’ who ‘owned their own job’ (rather than just doing ‘as they were told’). Overall, however, the hierarchical context seemed to dominate, especially in terms of final decision-making. Both strategic decisions (on the focus and ambitions of ILS) as well as concrete project proposals, needed to be discussed and approved by the steering board and commissioning authority (i.e. hierarchical ‘pyramid structures’). All this mainly had to do with the hierarchical history of the program. The steering board essentially consisted of the same partners that made up the steering board of the preceding V&W program *Transport Avoidance*, which had been coordinated by the same manager. Not only did the *program* have a hierarchical history in terms of its initiation and supervision by V&W, the relation between the manager and the steering board also had a hierarchical

²⁷⁹ Interviews nr. 36, 38, 39, 40, 41 and 43 [appendix II]

legacy. This was further confirmed in the formal agreements between V&W and Connekt, as demonstrated by the following excerpts of the program proposal:

Each project place will be approved by the commissioning authority beforehand (...) for each sub-project a project-plan will be made and presented to the commissioning authority for approval (...) Such project plan will, if necessary, be adapted and improved. Also this adapted project-plan will be presented to the commissioning authority for approval. (...) The commissioning of sub-projects will be formalized and standardized in such a way that the commissioning authority can use a uniform and efficient way to: - guard the substantive progress; - guard the financial progress; -periodically report sub-projects in a comprehensive manner; - test mid-term and end-results; -adapt budgets. (...) An agreement has been made with the commissioning authority that there will be a substantive review meeting every two months. The contact person for such review is the manager of TEE [/ISL]. (...) In order to safeguard the strategic advising, and in order to increase the public for the program, an Advisory Group [steering board] will be installed at executive level. This Advisory Group [steering board] will be directed by the Directorate General Transport and Air Traffic [DGTL] (...) The manager TEE represents Connekt in the Advisory Group²⁸⁰.

This text also indicates how the accountability of ISL towards the commissioning authority was based on *individual responsiveness* by the manager, rather than *shared team-responsibility*. Especially the manager was confronted with this situation. On the one hand, he really wanted ISL to be based on team-work; he involved team-members by sharing questions and doubts, and he explicitly asked for their opinion. In the team-bonding sessions that he initiated, it was apparent that he wanted to function as a team-leader, and not just as a manager supervising different subprojects. However, at the same time, many things were decided outside the team, and thereby ‘imposed’ on the team. The opinions and decisions of V&W, Connekt’s director, and the steering board, were mostly reported by the manager (in team-meeting and emails) as *a given*. When these opinion and decisions were not in line with the ideas or activities of team-members, the tendency was to bring ISL in line with its ‘supervisors’, rather than the other way around (i.e. ‘compliance’ and ‘do as you’re told’, rather than ‘good judgment’ and ‘own your own job’). Decisions at the program-level obviously impacted the separate subprojects, and there always seemed to be a lot of ‘waiting’ going on; waiting for this or that decision to be taken, or this or that project-proposal to be approved.

Even though ISL was now placed under Connekt, and therefore the manager had a different position towards V&W than he had had previously, it seemed that it was challenging to switch from a public official status to the status of a manager of an independent program (hardly surprising given the fact that the manager was confronted with the same steering board). I especially observed this ‘public official atmosphere’ in the set-up phase of ISL (TEE at that time), in which it was recurrently emphasized that the direction of agenda-setting depended on “what the steering board would say” or “what the ministry would decide”²⁸¹. There was clearly a public servant attitude, i.e. complying

²⁸⁰ Connekt Offer 2007, pp. 4 and 34-35 [document nr. 34, appendix III]

²⁸¹ Fieldnotes [meeting nr. 81 appendix I]

with the political decisions of the ministry, and approaching ISL as the *execution* of ministerial decisions. In November 2006 it was argued that these questions - on the extent to which ISL could take a pro-active role in agenda-setting independently from V&W - came 'too early'. As such it was implied that these questions would be clarified later on. However, through out 2007 and (the first half of) 2008, these questions remained. Not only was there a hierarchical relation with V&W, this hierarchical relation seemed to be particularly *unclear*. As mentioned earlier (section 6.3.4), it was unclear who exactly 'owned' the program, and the rotation of departmental directors, V&W's seemingly never-ending reorganization and new policy priorities, caused much confusion and insecurity regarding the position and support of V&W towards ISL²⁸².

The uncertainties regarding the external institutional context caused an insecure internal atmosphere within the ISL-team. This was aggregated by the fact that the team-constellation often changed; new people were hired, external advisors came and went. Especially the external evaluation at the beginning of 2008, and the subsequent session (see section 6.1.2.), were quite confronting for the team-members²⁸³. During a team-meeting in September 2008 (coincidentally the last meeting that I attended), the manager reported that the steering board had decided to have ISL evaluated by an external party. He also mentioned that he had been 'taken by surprise' by this decision²⁸⁴. The specifics of this evaluation – which took place in 2009 – are confidential and unknown to me, but the fact that it led to a substantial restructuring of the program, and the replacement of the manager, indicates another strong hierarchical element surrounding the ISL-program, i.e. the imposition of external monitoring (rather than self-monitoring).

6.5. THE TRANSITION POTENTIAL OF SUSTAINABLE LOGISTICS

In contrast to the other two case-studies, the ISL-program has no final reports or comprehensive vision documents to analyze. Moreover, the program was restructured in 2009/2010, in which the overall approach and focus of ISL changed. As such this section is based on analyzing the transition potential of certain elements of the ISL-program, *as observed in 2007 and 2008*. As explained in chapter 3, the aim of this section is not to measure the contribution of the ISL-program to 'the transition to sustainable mobility'. Instead, the goal of this section is to analyze the potential of ISL (in 2007 and 2008) from a transition, power, and empowerment perspective. For this I also make use of the distinction between 'innovation', 'optimization' and 'system innovation'. The hypothetical nature of this section is inherent to the word 'potential'. Therein the question is not to what extent the ideas that were proposed by ISL were, will or might be realised. Rather the question is *what if* these ideas would become reality; *what kind* of transition would that be? How would the resulting transport system differ from the current one? To what extent would the power relations in that system differ from the current ones? Who would be (dis)empowered by these changes, and how?

²⁸² Fieldnotes [meetings nr. 51,75, 82, 86, 113 and 123, appendix I].

²⁸³ Fieldnotes [meeting nr. 109 appendix I]

²⁸⁴ Fieldnotes [meeting nr. 126 appendix I]

Optimization played an important role in the ISL-ambition to make logistical processes more ‘compact, smart and efficient’. There was an explicit belief that there was still ‘a lot to win’ within the existing system in terms of efficiency increase (e.g. there are still many trucks driving half empty, and vehicles that are not energy-efficient). Regarding *innovation*, technological innovation (in ICT-applications and vehicles) was seen as an important factor to facilitate this optimization / efficiency-increase, but more emphasis was placed on ‘meta-innovation’, in terms of developing new *measuring* instruments (Digiscan, CO₂-measuring scale) and logistical *management* concepts. Through these innovations, businesses are supposed to gain insight on how (in)efficient their (procured or offered) logistical processes are, and what the different options are to increase efficiency. The main *system innovation* in all this lies in an aspired paradigm-shift regarding the procurement of logistical services. While most businesses procure logistical services primarily on the basis of lowest possible prices, the ambition was to integrate sustainability factors (mostly energy-saving) within this procurement.

Regarding ‘regime-replacement’, the ambition was not so much to replace current regime actors (in industry or the logistical sector), but rather to ‘infiltrate’ and ‘adapt’ the regime, in terms of making it aware of and interested in logistical efficiency, i.e. ‘logistics in the board room’. By demonstrating the energy-saving possibilities in logistical efficiency, logistics becomes interesting from both an economic as well as a political point of view (i.e. reducing CO₂-targets). “Sustainable logistics is brought in as a Trojan Horse”²⁸⁵, and “CO₂ is the feel good factors, energy saving is the business case”²⁸⁶. One of the strengths of the ISL-program (in its former set-up) was that it tackled ‘the regime’ from different angles and with different instruments, approaching large business as well as small- and medium sized businesses. Interesting in this regard is this figure in the position paper:

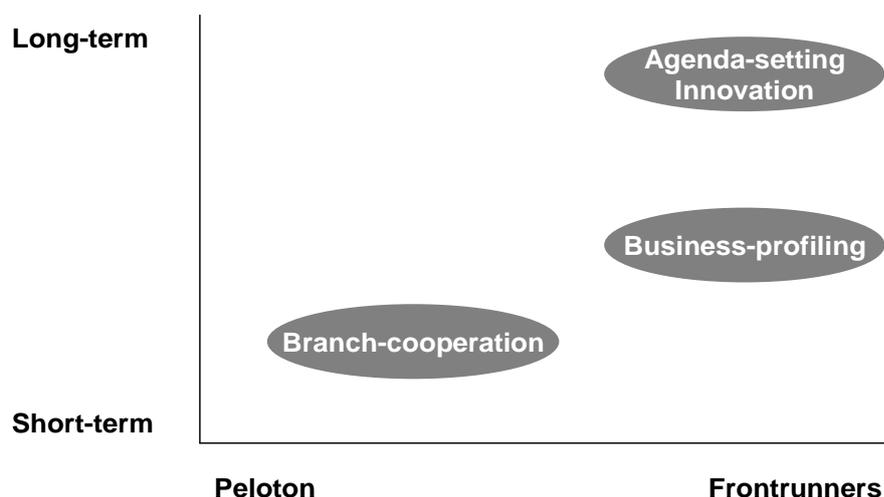


Figure 13. Categorization of subprojects in the ISL program²⁸⁷

²⁸⁵ Position Paper ISL 2007, p. 4 [document nr. 52, appendix III]

²⁸⁶ Fieldnotes [meeting nr. 108, appendix I]

²⁸⁷ Vision document, p.8 [document nr. 53 appendix III]

An important element in the ISL-program was to understand why and when businesses, including the small- and medium-sized ones, get interested in sustainable logistics. During the official kick-off in June 2007 there was a workshop called 'sustainable SMB' in which the participating small- and medium-sized businesses were literally asked why and when they would get interested in sustainable logistics. One of the participating business representatives distinguished three different reasons for businesses to get involved in sustainable logistics:

- It has (economic) advantages
- Non-sustainable logistics is 'not done' (like smoking during a business meeting)
- 'You have no choice' - If you don't do it, you'll suffer disadvantages.

The project-leader organizing this workshop reported this reaction in an email, and referred to it in meetings and discussion papers²⁸⁸. This is just one example, but it is illustrative for the way in which the ISL-program approached business (large, medium and small); listening carefully to their concerns, understanding their interests, and using these insights to set up projects and develop instruments. During team-meetings, many team-members reported back how different business-representatives had responded to the idea of sustainable logistics, followed by a discussion on what this meant for the ISL program on how to improve its mobilizing strategies. The reason I emphasize this element of the ISL program, is that it points to its main 'transition potential'; getting industry interested in an 'ignored' aspect of corporate sustainability (i.e. logistics). The specific transition it aimed for can be characterized as follows: *a transition from a purely cost-minimizing attitude towards logistics, to the integration of sustainability indicators in (the procurement of) logistical services*. Even though the explicit use of transition language in the proposals for the agenda-setting project were not taken up, and even though agenda-setting fell apart in several 'strategic projects', one can argue that most of these strategic projects were 'explorations of different transition paths'. Besides the earlier mentioned project on *Procurement of Sustainable Logistical Services*, there were also projects on *Deceleration in Logistical Chains*, *Sustainable Warehousing*, *Sustainable Construction Logistics*, and *Sustainable Urban Distribution*.

Besides the promotion of logistics as an important element of corporate sustainability, ISL also promoted corporate sustainability in *general*. This had to do with the fact that ISL directed itself at both the demanding side (shippers) and the providing side (carriers). The strong focus on the demanding side, i.e. the *procurement* of logistical services by shippers, was based on the insight that this was a necessary condition to enable change on the providing side, i.e. the *offer* of logistical services by carriers / transport operators. The idea was that *only* when shippers would get interested in corporate sustainability, and thus would start demanding sustainable logistical services, it would become interesting for transport businesses to consider sustainability. On the one hand, this speaks in favor of ISL's transition potential, as it looked beyond the logistics sector and aimed to contribute to corporate sustainability more generally.

²⁸⁸ Email and individual vision document 2007 [documents nr. 60 and 51 appendix III] *translated by F.A.*

On the other hand, I argue that there was a more *logistics-specific* ‘transition potential’ in ISL that was not exploited, that being the possibilities of a more pro-active role for the providing side of logistics. For instance, we interviewed the logistical manager of a large Dutch retail chain store, who had an interesting view on logistics:

The logistics sector actually has to *un-learn* something. We are too solution-oriented... we are always solving things. But if we start thinking in terms of added value we would get a different pattern; reorganizing from a logistics perspective. Then we would start doing things differently... primarily we would reduce distances between production and consumption. (...). [My company] is a very emotional company. That is something you often see in the retail business; commercially everything seems like a good idea. There is this dominant idea that we can easily spread a new product throughout the Netherlands. But from the perspective of logistics, we might as well give away that stuff for free (...) The world is turning into our backyard; economic scarcity is reducing and the differences are becoming smaller. There will be a new balance. The flow of containers will still increase but eventually it will smoothen out. When that happens, logistics will be the organizational factor that dares to cover the broader picture. But when you tell this to the average logistics person, they don’t get it. That is because the education programs are so fragmented; logistical education is a mess. Logistics is not well profiled. It is one of our most important trade sectors that we have, but we don’t do enough with it²⁸⁹.

The potential of this vision lies in the transition *from a ‘derived’ logistical sector to a ‘leading’ logistical sector*, from a sector that follows and enables existing industrial practices, to a sector that takes the lead in *changing* industrial practices. This is not about facilitating current industrial practices ‘more efficiently’. As emphasized in the interview above, and by several others, the current logistical sector is already ‘far too efficient’; it enables an astonishingly fast transport of goods for an astonishingly low price. By doing so, it facilitates many unsustainable industrial practices (such as the peculiar habit of driving goods around without a destination, just because the *transport* of these goods is sometimes cheaper than the *storage* of these goods). As such, the challenge is not to further optimize transport in order to meet current industrial demands; on the contrary, it is about *rethinking* industrial practices from an integrative logistical perspective. The problem pointed out in the interview above, is that many logistical managers are not trained to think at such strategic level. Although the ISL-program aimed to promote the importance of logistical management for corporate sustainability, it primarily did so by trying to ‘convince’ business actors that still had no explicit vision on sustainable logistics. It was argued that it is particularly difficult to find ‘frontrunners’ in the logistical sector, and that it was therefore better to focus on ‘frontrunners’ in other sectors, and get those interested in logistics, while in the mean time improving the skills of logistical service providers. However, the logistical manager described above could qualify as a ‘frontrunner’, and yet he was not explicitly recognized as such, nor was the vision presented in his interview explicitly used as input for the round table discussion.

It can be argued that ISL underestimated the transition potential of mobilizing *logistical managers* as ‘visionary frontrunners’ and linking them to frontrunners in other fields. A

²⁸⁹ Interview nr. 40 [appendix II]

good example is the Cradle to Cradle (C2C) concept. As mentioned earlier, ISL commissioned a study on the link between C2C and logistics, and concluded that even though logistics was very important for C2C, logistics remained secondary to C2C developments, and that therefore it was not interesting for ISL²⁹⁰. One could however also have reasoned in the exact opposite way; i.e. C2C requires logistical insights, therefore ISL will take up the challenge of integrating logistics in C2C, thereby facilitating its development²⁹¹. By doing so the logistical sector would *accelerate* the initiation of other transitions – not only in energy but also in material use – rather than merely *following* ongoing transition processes. The transition in logistics would be *from a 'derived' and 'reactive' logistical sector to a 'leading' and 'proactive' logistical sector, that enables sustainability transitions across sectors*. This would also be significantly more radical in terms of regime-replacement. For it would imply that the current power relations – in which logistical managers and transport operators have an explicitly inferior position to the commercial directors of industry – would change.

This leads us to the issue of empowerment. ISL primarily aimed to empower business actors to take up the challenge of sustainable logistics. Therein several 'empowerment-disempowerment' paradoxes were observed. I distinguish four issues: 1) the relation between government and industry, 2) the relation between shippers and carriers, 3) the predominance of business interests, and 4) the lacking attention for the 'people' aspect of sustainable logistics. To start with the first; ISL aimed to facilitate and stimulate the self-improving capacities of business, rather than imposing government regulations, by spreading awareness and developing accessible and practical instruments (see section 6.2.7). However, in interviews and meetings it was emphasized that many business actors actually *wanted* government to impose clear regulations and standards (regarding environmental concerns)²⁹². According to them, the problem was not so much *that* government would impose legal regulations, but rather that many of the current regulations were *unclear* and hampered innovation rather than enabling it.

This issue was initially included in ISL, in the form of two subprojects, one on 'transport management' and the other on 'transport efficient government policy'²⁹³. However, both these subprojects were removed from the ISL-program before they even started, partly because of 'budget-cuts', but foremost because these policies were controversial and unpopular amongst business lobby groups, and V&W did not want to 'burn its fingers on this issue'²⁹⁴. As such, we had a situation in which ISL asked *industry* to take up the challenge of sustainable logistics, while in the mean time government avoided

²⁹⁰ ISL report over year 2008, pp. 11, 18 [document nr. 38 appendix III]

²⁹¹ The C2C concept implies extensive logistical challenges; the idea of 'upcycling' the majority of products implies an astonishing amount of extra transport as all these products have to be returned to their producers (reverse logistics, close supply chains, etc.)

²⁹² Interviews nr. 35-43 [appendix II]

²⁹³ The project on *Transport Efficient Policy* had the ambition of making the government set a good example in procuring sustainable logistics services, and also in reconsidering policies that had an unintended effect in terms of hampering transport-efficiency. Connekt Offer 2007, pp. 22-23 [document nr. 34 appendix III]

²⁹⁴ Interviews nr. 29-34 appendix III, Connekt Offer 2007, pp.20-23 [document nr. 34 appendix III]

the risk of taking controversial measures. Although this can be framed in terms of ‘empowerment’ – i.e. ‘government facilitates industry’ and ‘government give business actors the opportunity to do it themselves’ – it can also be explained in terms of delegating responsibilities. Hence the ‘empowerment-disempowerment’ paradox; by placing the responsibility with business, the level-playing-field that comes from imposed government regulations (i.e. same rules for all companies) was lost, which is *disempowering* for industry.

The second empowerment-disempowerment paradox lied in the predominant focus on the demanding side of logistical processes, i.e. shippers rather than carriers. As discussed in previous sections, the starting point of ISL was that it was difficult to find ‘frontrunners’ in the logistical sector, and that it was therefore better to focus on ‘frontrunners’ in other sectors, and get those interested in logistics, while mean while improving the skills of logistical service providers. By doing so ISL (unintentionally) confirmed the unequal relation between production companies and transport companies. Rather than triggering the leading and ‘frontrunning’ potential of logistical managers, it confirmed their servant and dependent position towards commercial trends. Although ISL did aim to ‘empower’ the providers of logistical services, in terms of providing them with practical instruments, these instruments were mainly focused on *facilitating* existing industrial demands, rather than providing them with a platform to *rethink* industrial practices from an integrative logistical perspective. In other words, it can be argued that the empowerment of shippers undermined the empowerment of carriers, especially because the former were already more empowered than the latter.

This leads us to the third empowerment-disempowerment paradox, which lies in the focus on business in general. ISL did not aim to gain power itself, but rather provided ‘others with power’ (i.e. the capacity to mobilize the necessary resources to achieve sustainable logistics). In principles this was not just directed at business, but also at government, NGOs, and science:

The area of ISL find itself in between various stakeholders; business partners, government, NGOs and knowledge institutes. In this field ISL provides an ***independent platform*** which aims to facilitate change, ***without claiming power for itself and within a niche where nobody is the boss***. This is according to the wishes and motives of the various stakeholders involved²⁹⁵.

In practice, however, it seemed that ISL mainly provided this ‘platform’ to business actors. As discussed earlier, the round table involved only one representative of an environmental NGO and one professor, which was hardly enough to counterbalance the other 15 participants representing business and government. Obviously, this round-table was only one event, but it was illustrative for the entire program, which mainly focused on public-private dialogues. This was also conducted by ISL’s placement under Connekt. Although ISL’s public brochure characterized Connekt as “a non-profit organization on sustainable mobility”, it should be acknowledged that Connekt is overtly oriented towards

²⁹⁵ Vision document 2007, p. 3 [document nr. 53, appendix III] *emphasis added*

‘the market’ and focused on public-private partnerships related to mobility *in general*, regardless of whether or not these revolve around sustainability. As far as environmental NGOs and universities were involved in Connekt, these were primarily selected for their ‘business-mobilizing-potential’. Also, the environmental NGO and university that *were* closely involved in ISL happened to be especially renowned for their ‘business orientation’. There was no involvement of ‘civil society’ representatives with a more critical attitude towards business, or with a more radical view of sustainable logistics. In a societal context where freight transport is fiercely criticized from the perspective of sustainability, one would expect a program on *sustainable* logistics, which aims to provide an ‘independent platform’, to also empower critical civil society representatives, by at least providing them with a voice in some of the meetings. This did not occur, at least not during the period that I was involved in ISL.

This leads us to the fourth and final ‘empowerment-disempowerment’ paradox; the overall lack of attention for the ‘people’ aspect of sustainable logistics. To start with the role of ‘consumers-citizens’ in sustainable logistics, this issue was brought up on several occasions, in interviews with business actors, and during several session and informal discussions. The director of the largest Dutch provider of fruits and vegetables, emphasized that ‘the Dutch consumers’ were ‘lagging behind’ in terms of sustainable purchasing, compared to England or Germany, that despite of all political trends the “lowest cost” was still a priority in Dutch culture, and that this provided the largest barrier in facilitating sustainable food business²⁹⁶. This was also brought up during the roundtable discussion. In a retrospective reflection on the outcomes of the roundtable, a member of the ISL-team emphasized this point:

the limit of acceptance of the citizens is achieved! That is a challenging starting point. We have to develop this further, prove it, make them feel it!!! Let the consumer speak! That can increase the urgency. To me that seems more effective than the threat of law and regulations (...) we have to be more creative in finding solutions for the way in which we can still satisfy the customer (...) you have to ensure that consumers will spend more time and money on services and products that require a little amount of transport. The question is whether for that you should sit around the table with logistical managers of carriers and shippers. It is better to do so with innovators of new products and services. We should say to businesses: “The consumer of the future will only go for CO₂-saving products and services; is your product still in there?”²⁹⁷

Despite of these and many other calls to give more attention to the role of consumers, this issue was never really integrated in the program. To be fair, it must be acknowledged that logistics and freight transport are particularly difficult themes to involve ‘the consumer’. For even environmentally aware ‘organic-fans-with-vegetarian-microbiological-diets’ often don’t care whether their shitake-mushrooms and soy-products are dragged all the way from Japan or Brazil. Even for sustainability minded individuals, the freight transport involved in products seems to be less important than other issues, such as fair-trade, animal-well being, energy-efficiency, or waste-efficiency.

²⁹⁶ Interview nr. 39 [appendix II]

²⁹⁷ Email ISL team-member [document nr. 61 appendix III]

Another complicating factor is that transport-reduction in terms of aiming for regional products, can be contradictory to other sustainability factors, such as supporting the economy of developing countries, or energy-efficiency (e.g. the strawberry from Israel is more energy-efficient than the strawberry grown in Dutch green houses, see section 6.2.4.). However, despite of all these complicating factors, there still were plenty of opportunities to involve citizens; e.g. promoting regional products that are energy-efficient, involving citizens in innovative urban distribution projects or urban permaculture initiatives, or involving consumers by providing differentiated prices based on transport-efficiency. For instance, in a workshop on sustainable logistics for small- and medium sized businesses, the idea was brought up to offer differentiated prices on internet shopping websites (e.g. Bol.com, the Dutch equivalent of Amazon.com), including the option of cheaper, slower delivery service. Such ideas were not explicitly integrated in ISL's ambitions.

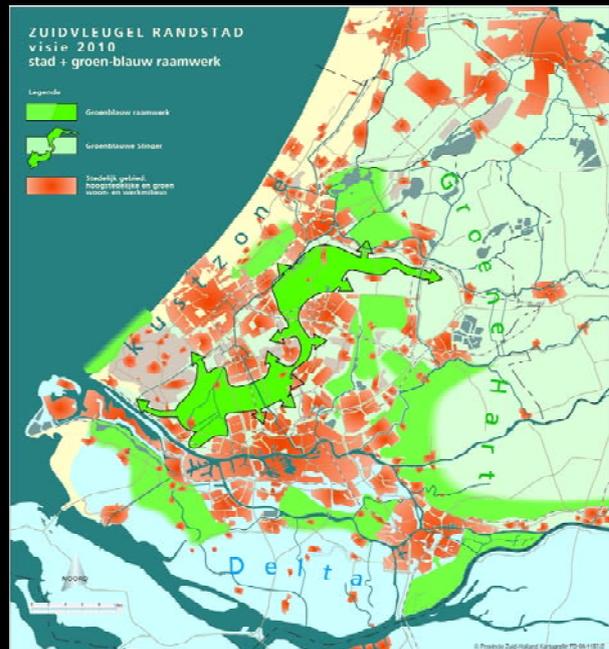
Besides the lacking involvement of consumers as transformative actors, there also was a lack for citizens *concerns*. Interviews with business actors clearly indicated that there were not only trade-offs between planet and profit, or between different planet-aspects, but also *between planet and people*. For instance, while national government and businesses prioritize energy-efficiency and CO₂-reduction, local governments are more concerned with aspects that directly impact citizens, i.e. air quality, safety, noise reduction, public space, etc. From an energy-efficient and CO₂-reduction perspective, it is better to distribute many products in one large truck than a few products in many vans. Even from a traffic safety perspective this might be better; albeit counter-intuitive to citizens, one large truck causes significantly less safety-risks than many vans. However, large trucks disturb the local quality of life, as perceived by citizens. The same counts for night distribution; beneficial for profit and planet (as vehicles stuck in traffic jams are not only expensive time-wise but also use up more energy and cause more emissions), but detrimental for safeguarding current rules on driving hours; night distribution might disturb not only surrounding inhabitants, but also the labor conditions of truck-drivers.

One of the reasons why ISL did not explicitly integrate these people-oriented issues was that other platforms and initiatives 'already did so'. It was believed that it was better to do one thing well (i.e. energy-efficiency, business-to-business) than to do many things badly. Although this is perfectly understandable and justified, the problem is that the inherently integrative dimension of sustainability causes it not to be an 'accumulative thing'. That is, aiming for only one aspects of sustainability may not only cause other aspects to be ignored, it may in fact explicitly *harm* these other aspects, and thereby be disempowering for certain people. Even though the team-members of ISL *acknowledged* the people aspect of sustainable logistics, it was not part of their external message towards business actors. From an empowerment perspective, it can be seen as unethical to reward a business for 'sustainable logistics' merely based on CO₂-reduction, if meanwhile this business ignores other aspects of 'sustainable' logistics. The empowerment-disempowerment paradox therein is that by profiling (and thus empowering) partly unsustainable businesses as 'sustainable', one weakens and disempowers those who either suffer from, or fight against, those unsustainable practices that still remain.

Having said that, the ISL program never claimed to take the people aspect in to account, and the new phase of the program – which comprises a shift from the notion of ‘sustainable logistics’ to the notion of ‘Lean and Green’ – has made it even more explicit that the focus is primarily on CO₂-reduction, thereby emphasizing that the program does not claim to cover all aspects of sustainability. As I was in the process of finalizing this PhD-thesis, I myself saw a truck of the Mars company drive by on the Dutch high road, which proudly carried the logo “Lean and Green”, largely imprinted on the side of its truck. While one may regret all those aspects of (un)sustainability that remain untouched and unquestioned, one has to acknowledge that the ISL-program at least visibly managed to empower shippers to pay attention to one specific aspect of sustainable logistics, and to create and spread a visual symbol of green business that is literally ‘on the road’.

INTERMEZZO B.

The South Wing Region: Power, Mobility and Space in Transition



The *South Wing* refers to southern region of the *Randstad*. The *Randstad* is how we call the most intensely urbanized and ‘economically vital’ geographical area of the Netherlands. While the *North Wing* of the *Randstad* covers the cities Amsterdam and Utrecht, the *South Wing* of the *Randstad* includes the cities of The Hague and Rotterdam, and overlaps with the urbanized parts of the *Province South-Holland*.



Figure 14. The South Wing region

Between 2005 and 2009, DRIFT ran a project that focused on the South Wing region. I was involved in this project from beginning to end; studying the region, interviewing stakeholders, organizing and participating in the regional ‘transition arena’, and co-authoring commissioned reports on spatial planning and mobility in the South Wing (see appendices for specification of interviews, meetings and documents). Of all my empirical experiences, the South Wing left the deepest impression on me; I witnessed how regional boundaries were redefined and debated, how the complexities of multiple governmental levels were contested, and how the struggles between spatial planners and transport planners manifested themselves in a regional context. Moreover, DRIFT’s South Wing project provided ample insights on how to apply a ‘transition perspective’ to a region, and how (not) to organize a regional transition arena process. In this intermezzo I aim to discuss the main lessons that can be drawn from this South Wing case on ‘power in transition’. As explained in chapter 2 and 3, the focus is not on analyzing the case in terms

of the power framework, but rather on describing the more implicit discursive and definitional dimensions of power in transition (management). This will provide important insights for chapter 7 and 8, both of which will refer back to the observations in this intermezzo.

B.1. GOVERNMENT DISCOURSES ON THE SOUTH WING REGION

B.1.1. The Rise and death of the South Wing concept

The concept of the South Wing region originated at the beginning of this millennium, in a policy document of the ministry of economics, which emphasized the importance of a regional perspective on economic growth, and proposed to categorize the Netherlands into six economic regions²⁹⁸. These regions were described as ‘city networks’ around ‘economic nuclei’, which included the most important concentrations of ‘driving business activity’. The clusters were characterized as having at least one university and ‘important relations’ with ‘mainports’. The Randstad was divided into two regions: a ‘North Wing’ and a ‘South Wing’, based on the argument that these wings had a distinctly different ‘functional and economic coherence’, and that this also implied different ‘innovation needs’. The most obvious contrast was drawn between Amsterdam (with its airport and focus on ICT and financial services) and Rotterdam (in which economic activity mainly evolved around its seaport and (petrochemical) industry).

Several actors involved in regional governance seemed skeptical about the distinction between the North Wing and South Wing. When asked about it, most respondents were explicitly critical about this wing-distinction, calling it ‘confusing’, ‘illusionary’, ‘absolute nonsense’, ‘undesirable’, ‘dysfunctional’, and ‘annoying’²⁹⁹. Not only were the regional boundaries of the South Wing contested, the very concept of regional ‘wings’ in itself was controversial. Although most admitted that there was a significant cultural and physical distance between the two wings, and that there were considerable economic and functional differences, they argued that these distances and differences were something to be overcome, rather than confirmed. Especially the international perspective was used to argue against the wings and in favor of the Randstad as one regional entity, it being comparable to London or Paris in size and population. One interviewee gave a particularly cynical interpretation of the wing-distinction, stating that ‘all these scales and categorisations’ were a matter of ‘self-interest of organizations asking for budgets from the national government’, that the wings simply existed ‘because money was made available for it by the Minister and actors in the region mobilized to profit from that’, and that ‘nobody cared whether such clustering was a good one from a general innovation or sustainability point of view’³⁰⁰.

However, some respondents were more positive about the wing distinction, as they confirmed the need for such regional categorization. In terms of mobility, one could

²⁹⁸ ‘Pieken in de Delta’ 2004 [document nr. 9 appendix III]

²⁹⁹ Interviews nr. 1 to 8 [appendix II]

³⁰⁰ Interview nr. 8 [appendix II]

regard the two wings as being separated by a transport ‘gap’, as both the roads and the rail connections between the two wings are remarkably less developed than they are *within* the wings. From a pragmatic point of view, this lacking connection between the two wings was also an argument for the distinction, in the sense that actors were more likely to participate in innovative projects when the travel associated with it is manageable. Another argument was that existing institutional, governmental borders (i.e. national, provincial, municipal) did not coincide with ‘actual physical systems’, and that it was necessary to try and define such ‘actual functional, geographical borders’. This argument related to ongoing political debates about the creation of a Randstad-government, which would complement or replace the four provincial governments that now shared the responsibility over the Randstad area.

While several leading policy-makers argued in favor of a Randstad-authority, others argued against it. A leading policy-maker from the *Ministry of Housing, Spatial Planning and the Environment* (VROM) claimed that ‘relevant decisions are made at the level of city regions and wings, not at the level of the Randstad’, and that ‘there are few topics that should be approached at the level of the Randstad’³⁰¹. Even those in favor of a Randstad authority, admitted that the entire Randstad was still ‘too big to manage’, both for policy-makers and their advisors. The wing distinction was believed to make the size and scale of a region more ‘manageable’³⁰². In a way, the regional ‘wings’ were seen as an intermediary, transitional step towards a Randstad-unity

In the last three years, however, one could observe a disappearance of ‘wingspeak’ in favor of an increasing focus on the Randstad as a whole. In 2008 the government presented the program ‘Randstad Urgent’ and the vision ‘Randstad 2040’³⁰³. These two were extensively discussed at a large meeting of the organization *Deltametropool*³⁰⁴ in July 2008. At this meeting, a policy-maker stated that there was ‘too much competition between regions’, that ‘we needed a new perspective’, that ‘there were visions organized at the wing-level such as the South Wing’, but that now ‘the question was how this fitted in a broader vision of the Randstad’³⁰⁵. At the end of the meeting, VROM minister Jacqueline Cramer declared that she actually “wanted to get rid of the North and South Wing” because “we are *one* Randstad”. This shift ‘from wings to Randstad’ was also manifested in *personal* career transitions; the director of ‘Space & Mobility’ at the Province of *South-Holland* became a department director at the Province of *North-Holland*, and in 2008 the landscape architect who had run the *South Wing Atelier* became the new director of *Deltametropool*. One can argue that, in this first decade of this millennium, we witnessed *the rise and death* of the wing concept, and that its existence was a transitory phase in an overall transition towards ‘a Randstad government’.

³⁰¹ Interview nr. 50 [appendix II]

³⁰² Interviews nr. 1 to 8 [appendix II]

³⁰³ ‘Randstand 2040’ 2008 [document nr. 10 appendix III]

³⁰⁴ <http://www.deltametropool.nl/nl/index>

³⁰⁵ Fieldnotes [meeting nr. 121 appendix I]

B.1.2. Governmental ‘overload’ and governmental innovation

Besides Rotterdam and The Hague, the South Wing region includes 59 other, smaller cities, resulting in a total of 61 municipalities and several sub-regional governments (so called *Stadsregios*). On top of that, the South Wing region is governmentally run by the Provincial government of South-Holland, several ministerial departments, water boards, and numerous other platforms and institutional bodies, where departments of all shapes and sizes cooperate in some form or another at different geographical levels. The resulting institutional maze can be roughly schematized as follows (see figure below).

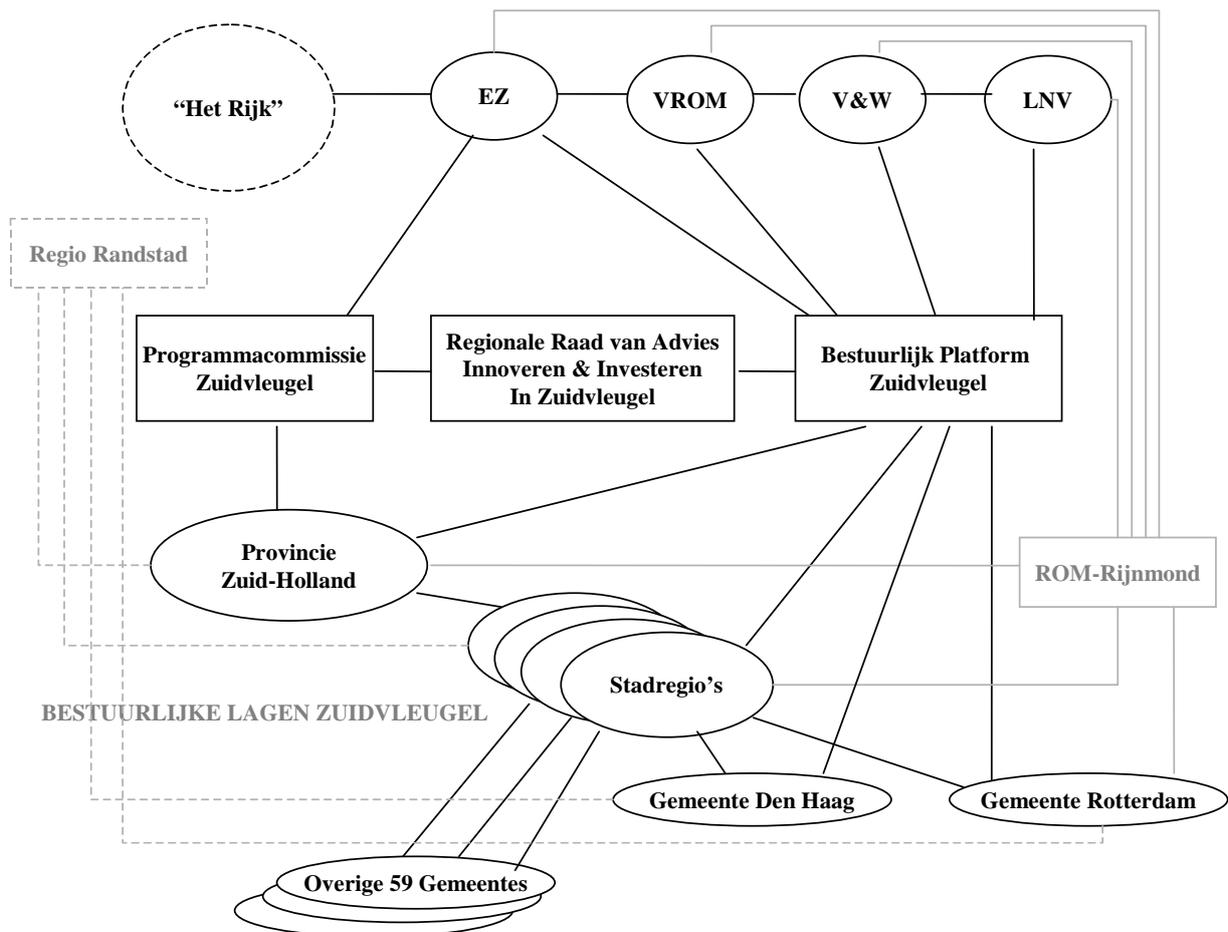


Figure 15. Institutional maze South Wing region (see index of abbreviations)

In interviews and meetings, some referred to this institutional maze as a ‘governmental overload’, others as a ‘governmental vacuum’³⁰⁶. While the director of ‘Space and Mobility’ at the Province of South-Holland claimed that “nobody is the boss in the South Wing” and that, as such, “civil servants cooperated on a voluntary basis”³⁰⁷, others emphasized that there were *too many* ‘regime-players’ that did *not* cooperate with one another³⁰⁸. Interestingly, some regarded the ‘governmental overload’ and maze of

³⁰⁶ Translation from the Dutch terms ‘bestuurlijke drukte’ and ‘bestuurlijke leegte’

³⁰⁷ See interview in Qualitime Magazine [document nr. 41 appendix III]

³⁰⁸ Interviews nr. 15-21 [appendix II]

institutions as an *opportunity* for informal cooperation, to ‘slip in between’ the procedures, and to ‘go beyond governmental thinking’³⁰⁹. Many respondents seemed to agree that there was a need for ‘governmental innovation’ and ‘reorganization’. Some argued that new regional categorizations at either wing- or Randstad level would provide the appropriate scale for reorganization, in terms of ‘up-scaling’ local interests. Others pointed out that the Netherlands already had so many different regional boundaries and subsequent governmental levels, and that it would be unwise to introduce yet another regional governance level. As pointed out by one interviewee; ‘one would think they would get rid of the old, useless levels before creating new ones’³¹⁰.

These debates about multi-level governance, and the link between regional scales and governmental institutions, are part of the broader debate on ‘regionalization’, ‘globalization’ and ‘internationalization’, including the issue of international government and transnational cooperation (e.g. European Union and its Committee of the Regions). In interviews and meetings, nearly all respondents referred to ‘the international position’ of the South Wing and the Randstad. In one particular interview, the respondent emphasized that there was ‘a serious discussion’ going on, in which some claim that ‘the level that should disappear should be the national one’, leaving the future to interaction between the European, the regional and the local’³¹¹.

B.1.3. Defining, studying and influencing scales and boundaries

During the earlier mentioned meeting of *Deltametropool*, a large part of the discussions on stage revolved around scale and boundary issues³¹². One person argued that so far we had worked with ‘one, generic urbanization concept,’ and that we should now replace this with ‘plural, differentiated urbanization concepts’, in which ‘each city has its own urbanization concept’. Another person responded that he was more in favor of ‘a vision at a higher level’, and that therefore he was in favor of one Randstad-authority with democratic legitimacy. In turn, the former responded that he was ‘skeptical’ about such Randstad authority, and that ‘the real problematic issues’ actually had to be ‘tackled at a *national* level’, such as the housing market and the policies on industrial business sites. In turn, the latter replied that ‘everything was interconnected’, and that therefore we needed the ‘political courage’ to ‘consequently focus on an issue for a longer term’ (i.e. in a Randstad authority).

This type of discussion is typical for any kind of ‘scale’ and ‘boundary’ debate. Different issues (e.g. climate change or air pollution) come with different ‘appropriate scales’ and ‘boundaries’ in terms of governance and research. The interrelation between these different issues (and the wish to include those interrelations in a governance strategy), makes it nearly impossible to choose for one scale or boundary over another, as all scales and boundaries seem relevant for one issue or another. To complicate matters further,

³⁰⁹ Fieldnotes [meeting nr. 38 appendix I]

³¹⁰ Interview nr. 8 [appendix II]

³¹¹ Interview nr. 8 [appendix II]

³¹² Fieldnotes [meeting nr. 121 appendix I]

the scale and boundary debate is also influenced by knowledge and measurability. As a landscape architect put it during an interview; his computer system could ‘not yet handle the entire Randstad’ – it would result in a geographical map with ‘just some lines and circles’ – while the South Wing allowed for more detail and precision³¹³. Interestingly, some of the traffic modelers working in the A15-project (see chapter 5) argued the same about the South Wing: that this region was ‘too big’ to include in their traffic models, which required them to focus on the A15-corridor³¹⁴. Climate scientists, on the other hand, work with global earth models and have difficulty to include local and regional information.

As such appropriate scales and boundaries to collect information differ for each issue and discipline. For governance, the question is how and to what extent policy makers depend on research and information about the regional (sub)systems they wish to ‘govern’. During the earlier mentioned Deltametropool meeting, this was an explicit topic of debate. When analyzing the debates on the Randstad and South Wing, one can distinguish four aspects regarding the issue of scales and boundaries. People question whether the scales and boundaries correspond to:

- what *is* ‘really’ out there (e.g. physical borders, economic & functional properties)
- what we (can) *know* (e.g. which scale is most appropriate to collect information.)
- how we can *influence* (e.g. at which scales we can best govern, cooperate)
- what we *communicate* (e.g. which boundaries do we define and communicate)

Essentially, many of the discussions revolved around the question how these four different aspects *should* correspond to one another. The disagreement was often based on different ideas about which aspect was prior to the other, and which should be adapted. Should we adapt the level at which we govern to ‘physical boundaries’, or the other way around? Should we adapt what we know to what we can best influence, or the other way around? Some emphasize that scales and boundaries should primarily correspond with physical realities, others emphasize that scales and boundaries should primarily be clear and useful to communicate, also for non-governmental actors (e.g. business actors). Sometimes, different aspects of the scale and boundary-issue were mingled up in one single argument. Take for instance the following statement of the VROM-council, who opened the Deltametropool meeting with the following rhetorical question: ‘do we want the Randstad to become a system, or do we want to continue steering on the South Wing and the North Wing’? This is a fascinating sentence to analyze, for it assumes that the Randstad will (only) ‘become a system’ if we govern at the level of the Randstad. In other words, it implies that the system boundaries that we define and use in government *predetermine which systems (can) actually come into existence*. An additional issue, much less discussed so far, is the question of which scales and boundaries correspond with *social and regional identity*.

³¹³ Interview nr. 20 [appendix II]

³¹⁴ Fieldnotes [several meetings on A15-projects, appendix I]

B.1.4. The South Wing as 'weakest link' of the Randstad

The South Wing was generally referred to as a problematic region. The *Governmental Platform South Wing* listed the problems as follows: 1) 'lack of economic vitality (low level of knowledge intensity, high levels of unemployment)', 2) 'lack of social cohesion (departure of middle- and high income groups)', 3) 'decreasing transport accessibility', 4) 'quality deficits in residential and living environment', and 5) 'insufficient sustainability and disappearing landscape'³¹⁵. Also, in nearly all interviews and meetings, participants emphasized that the South Wing was not doing well. The South Wing is 'that part of the Randstad where it is unpleasant to live'³¹⁶, 'the most hopeless area of the Netherlands' and the 'sick child of the Randstad'³¹⁷. The problems referred to included socio-economic issues – a relatively high level of low income groups, intercultural tensions and related safety issues (for Dutch standards) – as well as spatial and environmental issues, i.e. traffic congestion, pollution, and a loss of landscape. The South Wing was often compared to Los Angeles, referring to car dominance and a supposed lack of nature and 'green' areas within the urban environment. As one person put it; 'the reality is that we are in Los Angeles, but then six meters under sea level'³¹⁸. Also at the level of national policy-making, the South Wing was referred to as the 'weak wing' of the Randstad, especially in terms of 'international' and 'economic' competition. In an interview, a VROM policy-maker indicated that the Netherlands fulfill a total of 10 'top functions' that 'count in an international context'³¹⁹. Supposedly, 7 of these 'top functions' are in Amsterdam (e.g. airport, financial services, tourism), while only 3 'top functions' are in the South Wing: political and judicial institutions in The Hague, the harbor in Rotterdam, and horticulture in the Westland. Based on that, the VROM policy-maker claimed that there should be 'more focus on the North Wing than on the South Wing':

That is not only desirable but also realistic and factual... The economic growth lies primarily in Amsterdam and Utrecht, and less in Rotterdam. That is partly an international perspective but also a factual perspective (...) For a sustainable and competing top region in the EU, one especially looks at Amsterdam; that city can accommodate business headquarters.

The tendency to evaluate regions in terms of their economic and competitive strength resonated through nearly all interviews and policy documents. Therein quality of life and landscape protection was not just a social or environmental issue, but primarily an economic one; such quality of life would attract more business activity, thus improving the international competitive position of the region. The VROM policy-maker claimed that within the European context, regions do not so much compete on primary conditions (e.g. labor conditions or political stability), but rather on secondary conditions (e.g. attractive housing and living conditions), and that the problem of the South Wing was that it had too

³¹⁵ BPZ 2006 [document nr. 11, appendix III]

³¹⁶ Interview nr. 15 appendix II

³¹⁷ Interview nr. 16 appendix II

³¹⁸ Interview nr. 15 appendix II

³¹⁹ Interview nr. 50 appendix II

little of such attractive housing offer. The policy-maker also added that one ‘should take care that Rotterdam does not remain so lowly educated’.

Within the problem perception of the South Wing, there was a clear focus on the city of Rotterdam. There was a tendency to project the problems of Rotterdam, and its neighboring cities, on to the entire South Wing region. Within the Dutch context, the city of Rotterdam is quite the anomaly. While the majority of large Dutch cities are known for their picturesque old architecture and historic city centers, Rotterdam lacks this. The bombings of World War II left Rotterdam as ‘a city without a heart’, as it is often referred to. One sees modern and tall buildings, large streets, and, for Dutch standards, a relatively strong car dominance. Moreover, the city of Rotterdam has the largest proportion of immigrants and - in contrast to The Hague’s high level of ‘expats’ working at prestigious international organizations - a majority of those in Rotterdam are non-western labor immigrants, resulting in a relatively high levels of inter-cultural tension.

However, it was striking to notice how contradictory the feelings about Rotterdam seemed to be, ranging from hopeless pessimism to euphoric optimism. On the one hand, Rotterdam was used as a ‘doom scenario’, a ‘dystopia’ for the South Wing, fearing the toughness and anonymity of a metropolitan environment, and nostalgically longing for the historical city centers in other parts of the Netherlands. Especially the mono-functional ‘ugliness’ of Rotterdam, and its lack of socio-cultural coherence, were emphasized:

There is totally nothing left in Rotterdam, it was destroyed during the war and it has not returned until now. It is a pigsty for the pigs of commerce³²⁰. A lot of mono-functional districts have been built, (semi-) high flats, residential buildings with 4 floors and without an elevator... (...) a lot of spots are ‘dead and boring’... and distrust prevails³²¹.

Cities in the South Wing are in a bad state. One cannot live there, the extreme culture does not work, it does not mix. Look at Rotterdam, the largest minefield of the South Wing; a totally footloose society in South Rotterdam, a city center that is ugly and where nobody wants to come. Everywhere there is trash... a mono-culture of the same buildings. Demographically and social- geographically, Rotterdam is an anti-city: unsustainable, doomed, and faded, and with a population that is decoupled socio-culturally. Such a society cannot exist anywhere³²².

On the other hand, however, many seemed proud of Rotterdam as industrial harbor city and ‘economic motor’ of the Netherlands. In policy-documents it was mentioned that the *South Wing* covers 9% of the Dutch total surface area, while it produces 20% of its income, which is for a large part due to Rotterdam’s harbour and petrochemical industry. Rotterdam was referred to as a city of workers and a ‘hands-on, no-nonsense attitude’ (‘don’t bullshit but get on with it’³²³), of entrepreneurship, creative industry,

³²⁰ Translation from the Dutch words: “een slobberbak voor de zwijnen der commercie”

³²¹ Interview nr. 16 [appendix II]

³²² Interview nr. 15 [appendix II]

³²³ Translation from Dutch expressions ‘niet lullen maar poetsen’ and ‘handen uit de mouwen’

multiculturalism, and urban grandeur (e.g. tall buildings and large commercial festivals). Moreover, Rotterdam was celebrated for its *opportunities for change*:

Rotterdam has the potential as Netherlands' only metropolis. You do need to argue about the height of a building...Rotterdam is not an open air museum. There is no other city in the Netherlands with so many areas to be redesigned.

Rotterdam is the frontier of change. If it does not happen here, it happens nowhere.

Rotterdam is the best of which the South Wing has to offer³²⁴

The city of Rotterdam seemed to be *the* example for the South Wing, both in terms of what the South Wing *should* become, as well as what it should *not* become, and everybody seemed to have mixed feelings about it. In an interview, a famous landscape architect emphasized the benefits of Rotterdam's socio-economic and multicultural character; "the blues is not invented in a villa neighborhood"³²⁵. A few minutes later however, he claimed that what Rotterdam needed was "more neighborhoods like *Kralingen*", which happens to be one of Rotterdam's richest and most villa-prone areas, including the *Kralingsche Plas* (Netherlands' largest city park) and the *Erasmus University of Rotterdam*. Interestingly, the landscape architect himself lived in this rather 'elitist' neighborhood, just like many other policy-makers, professors, and advisors who help shape the idea of what Rotterdam and the South Wing supposedly 'need'.

B.1.5. Mobility and space in the South Wing region

The discussions about the South Wing and the Randstad primarily revolved around spatial planning issues. The Netherlands has a long standing tradition in spatial planning, and practitioners expressed mixed feelings about this planning tradition. On the one hand they indicated that the Netherlands was 'ordered', 'well designed', that it 'had the best spatial planning in the world, with high prestige internationally', and that it had 'been able to prevent much urban sprawl'. On the other hand, it was stated that spatial planning was 'in a crisis' and that the Netherlands had 'lost its planning tradition'³²⁶. Moreover, people criticized the idea of spatial planning by stating that the Dutch 'thought *too much* about spatial planning' and that 'it was 'an outdated concept' because 'space cannot be planned' and 'the landscape is not a garden'³²⁷. All practitioners, however, seemed to agree that there was now a problem with spatial planning, and that something needed to change. The main point of contestation revolved around the extent to which open green landscapes needed to be protected. Some claimed that the open green areas in and around the South Wing were too much protected, that they hardly had any ecological or aesthetic value, and needed to be used for urbanization and better transport connections. Others, however, believed that one should avoid construction in these areas, partly to

³²⁴ Interviews nr. 15-21 [appendix II]

³²⁵ Interview nr. 15 [appendix II]

³²⁶ Interviews nr. 17, 19 and 20 [appendix II]

³²⁷ Interviews nr. 15 and 17 [appendix II]

ensure quality of life, partly because they were necessary for water retention in the long-term³²⁸.

Another recurring point of contestation concerned the relation between transport planning and spatial planning. Even though everyone acknowledged that spatial planning and transport planning were intertwined and should be approached in an integrated matter, practitioners still debated which of the two should be ‘leading’³²⁹. Many referred to the ‘cultural’ differences between the spatial planning community and the transport community, each with their own disciplinary backgrounds, models, concepts, and theories. This cultural difference is manifested in the mere way that a spatial planner and a transport planner look at a geographical map; supposedly one primarily sees coloured fields, while the other mainly sees lines. Besides the cultural differences, there are also disagreements about costs and investment priorities. A transport economist declared that he ‘would start with spatial planning if the Netherlands was empty’, but that this was not the case; ‘infrastructure already exists’, ‘people often forget how expensive this infrastructure is’, and ‘it is horrible how much infrastructure is underemployed’, subsequently emphasizing how many spatial planning visions ignored this issue³³⁰. In the past few years, we observed the rise of a ‘regional approach’ in Dutch policy-making and planning (Minnesma et al. 2007). This regional approach is expected to decrease the gap between spatial planning and transport policies, by integrating these two at a context-specific level. South Wing policy-making was all about such a regional approach, not only towards spatial planning, but also in terms of transport planning and economic development. This leads us to the *South Wing transition arena*.

B.2. TRANSITION DISCOURSE ON THE SOUTH WING REGION

B.2.1 The South Wing as an ‘experimental garden’

Before describing the South Wing *Transition Arena* organized by the DRIFT, it is necessary to explain its background. In 2005 the South Wing region was presented as an ‘experimental garden’ that would connect several innovation activities of various transition- and innovation programs. This idea was primarily promoted by the dean of the faculty of social sciences at the Erasmus University of Rotterdam, who was called the ‘Trustee’ of the *Experimental Garden South Wing*³³¹. In a designated *South Wing Transition Arena*, organizations such as KSI, Transumo, and Habiforum were supposed to integrate their respective knowledge on transition management, mobility, and spatial planning in a common ‘experimental garden’ (i.e. the South Wing region), in which the linkages between several of their projects would be explored. This in turn was to be related to various other innovation projects in the region, as well as the *South Wing*

³²⁸ Interviews nr. 15-21 [appendix II]

³²⁹ Fieldnotes [several meetings, appendix I]

³³⁰ Fieldnotes [meeting nr. 121 appendix I]

³³¹ Translation from the Dutch term “kwartiermaker”.

Atelier commissioned by the Province of South-Holland³³². As such the South Wing ‘experimental garden’ was an integrative concept meant to connect and ‘up-scale’ several innovation projects at the regional level. In an interview, a Transumo-representative stated that the South Wing provided a ‘tactical level’ that had been missing so far:

One could say the Wings form the ‘tactical level’, whereas the strategic visions are formed at the international, national and even Randstad levels. In the Netherlands there has always been and there still is a strong tendency to take strategic decisions in the form of policy documents, such as *Nota Ruimte* and *Nota Mobiliteit* or provincial documents, and immediately translate these into operational projects. Everything has to become ‘concrete’ as fast as possible. Therefore, the Netherlands is missing one crucial level between this strategic decisions and operational practices; the tactical level, a reference framework in which the many different projects can be held together. These reference frameworks are not only about cooperation but also about testing the projects on their coherence, content and success. Furthermore, these reference frameworks (i.e. de wings in this case) can be compared to one another at the strategic level³³³.

The concepts of a ‘tactical level’, ‘experimental garden’, and ‘up-scaling’ innovation projects, resonated well with the multi-level transition management discourse. The ambitions and expectations surrounding the ideas of a regional ‘experimental garden’ were high, and DRIFT was seen as a pivotal actor in organizing a transition arena process around it. At DRIFT, two individuals were hired to lead these arena processes and to further research and develop the concept of ‘experimental gardens’.

It can be argued that the ambitious ideas of an ‘integrated experiment garden’ failed. Although the organizations, individuals, and projects mentioned above were highly active between 2005 and 2010, the actual *integration* of these activities in an overarching ‘experimental garden’ did not occur. Although there was a South Wing ‘transition arena’ set up (to be discussed in the next section), in which *KSI*, *Habiforum*, and *Transumo* participated, the outcome of that process primarily resulted in two separate reports; one focused on spatial planning commissioned by *Habiforum*, the other focused on mobility commissioned by *Transumo*. As for the concept of ‘experimental gardens’, this seemed to die a silent death as a central concept in transition management programs. The concept of ‘regional experimental garden’ was not scientifically conceptualized nor developed into a specific transition management instrument (in contrast to other themes such as transition experiments, scenarios, arenas, monitoring etc.). Regarding the intended cooperation between several organizations and projects, this did not occur, mostly due to the rather un-cooperative and competitive relations between different organizational representatives. I participated in numerous meetings on the South Wing ‘experimental garden’, and there I witnessed conflict and competition on various occasions, both at the organizational level - between *Habiforum*, *Transumo*, and *KSI*, between the South Wing *Transition Arena* versus the South Wing *Atelier* – and at the individual level – between different professors, advisors, and project-managers.

³³² Presentation & memo on South Wing as experimental garden [documents nr. 63 and 64 appendix III]

³³³ Interview nr. 6 [appendix II]

B.2.2. The South Wing transition arena

The South Wing Transition arena process, organized by DRIFT, consisted of two phases. The first phase focused on spatial planning and was commissioned by *Habiforum*. The second phase focused on the intersection between mobility and spatial planning, and was commissioned by *Transumo*. Overall, the process included a total of 8 meetings spread over four years (2006-2009) and two reports (Minnesma et al. 2007 and Van Eijndhoven et al. 2009). Together with several other DRIFT researchers, I was present at 4 of these arena meetings, and especially involved at the beginning and the end, in terms of preparing the arena-meetings, actor selection, interviews and analyzes, and writing parts of both reports. Arena participants (15-20 people) included business representatives, government officials, architects, NGO-representatives, and representatives of *Habiforum*, *Transumo*, and the *South Wing Atelier*.

The process of the South Wing Transition Arena was relatively chaotic, both in terms of process and substance. Individuals come and went, and the group composition changed quite a bit, both in DRIFT's project-team as well as in the arena. Moreover, it remained unclear through out the process what the exact focus of the transition arena was; was it the region itself, specific areas or projects therein, or the spatial planning and/or mobility sector? The result was a complex mixture of all four. Although the prescriptive transition arena model – as described in the literature – is supposed to lead to a transition *vision* and transition *agenda* that are developed by *the arena participants themselves*, this was not the case in the South Wing arena. Rather, the main output of the project consisted of two reports, and even though the input of the participants in interviews and meetings was described in these reports, they primarily consisted of analyzes written by DRIFT-researchers on the spatial planning and mobility sectors, and policy advice directed at *Habiforum* and *Transumo*. The main transition management researchers involved in the project often emphasized that the South Wing arena project was not a case of an actual 'transition arena'. Or in other words, the South Wing arena project failed as a transition arena, in the sense that it did not succeed in developing a shared transition vision and transition agenda that was carried out by the participants themselves.

This 'failure' and the fact that the South Wing arena differed from other transition arena processes, was a result of several factors. The last report (Van Eijndhoven et al. 2009) mentions the following two factors. First, the project had two different commissioning authorities (i.e. *Transumo* and *Transforum*), which fragmented the project in two different phases, thus leading to an unclear focus. Second, both commissioning authorities were *research* programs rather than governmental or business authorities. As such there was lack of 'governmental embedment'; there was no clear 'problem owner', and the ambition remained quite abstract and vague. This in contrast to other transition arena processes, where a specific governmental authority commissioned a transition arena process to deal with a specific regional or sector-related challenge, as was the case in the *Parkstad Limburg* transition arena (Loorbach 2007), the Zeeland arena (Henneman 2011), or the health care arena (Van den Bosch 2010).

While the lack of ‘governmental embedment’ is a fair and convincing argument to explain why the South Wing arena differed from other transition arenas, the transition management literature meanwhile emphasizes the possibility of *informal* innovation networks emerging, outside and independent of existing organizational governmental structures. There are two different ways to interpret this issue. On the one hand, one could conclude that in order for a transition arena process to succeed it requires ‘governmental embedment’ that has been defined beforehand, to safeguard that the transition ‘agenda’ is actually embraced by its participants and commissioners, and translated into action.

On the other hand one could also argue that a transition arena ‘without governmental embedment’ from the start could succeed, but that this would require a different process approach, one in which either the ‘governmental embedment’ is sought later on, during or after the process, or one in which the transition arena seeks possibilities for action *without* ‘governmental embedment’ (i.e. focused on business and civil society rather than government). I argue that there is a third factor to explain the ‘failure’ of the South Wing transition arena, namely that it was managed by project-leaders who had little to no previous experience with transition arena processes, let alone arena processes without ‘governmental embedment’.

Regardless of whether or not the South Wing arena did or did not qualify as a ‘transition arena’, and regardless of who or what is to blame for its ‘failures’, the point of this intermezzo is to discuss my empirical observations and experiences in the South Wing project, and to distil insights and lessons that could be useful for future transition management processes. Of all the projects I have been involved with, the South Wing project was without a doubt the most intense and time-consuming one. This was partly due to the fact that it was one of the first projects I got involved with, within the first year of my PhD. When I was asked to make an ‘actor-analysis’ and ‘transition analysis’ of the South Wing region, little did I know of where and how to start. I applied several methods and wrote large amount of texts, analyzing interviews, phenomenological observations, meetings, and policy documents. Although some of these were used as input for the reports, much better use could have been made of my efforts if they had been more systematic. It was not until the very end of the project, during retrospective reflection, that I realized which approach I should have chosen. In the next sub-sections I aim to convey the most important insights from my experiences.

B.2.3. Unsuitability of the technocratic South Wing concept

The first challenge I faced in the South Wing project was the very concept of the ‘South Wing’ itself. The first activity I carried out in 2005 was to interview eight individuals on their opinion about the ‘wing-distinction’ between the North and the South Wing. As extensively discussed in the section B.1, the majority of respondent were highly critical and sceptical about the wing-distinction. Based on these interviews I wrote a short essay in which I criticized the South Wing concept and advised *Transumo* against using it. In the conclusion of this essay I wrote the following:

In conclusion we can state that the proposal to design innovation projects in mobility on the basis of a regional clustering into a 'south wing' and a 'north wing' of the Randstad, is questionable at the least. The geographical, governmental and functional dimensions on which this distinction is based are confusing, cause incoherence and are decided from a restricted vision without taking the multi-level and multi-sector dynamics into account. Especially in terms of mobility, such multi-level and multi-sector approaches are crucial for a coherent and effective strategy. (...) Innovation experiments in the field of mobility should be about making favourable regional clustering possible, rather than the other way around. A program such as TRANSUMO should take such a multi-level and multi-sector approach in which mobility experiments are to be tested in the context of long-term sustainability of the system as a whole. There are various other ideas for regional clustering in combination with revaluation of the current provincial structures, which have more coherence in terms of functional, governmental and international dimensions (e.g. Randstad, Deltametropool, Province Holland). In order to make the 'experimental gardens' scientifically, politically and economically useful as a basis for sustainable mobility innovation projects, TRANSUMO should make a critical integrated assessment of what regional clustering it wishes to use and why.

Soon after writing that essay, however, I changed my mind about the South Wing concept. As described previously, the South Wing concept was believed to be a useful 'tactical level' that would enable the 'up-scaling' of various innovation projects, and seemed to be surrounded by several ambitious plans for the South Wing 'experimental garden' amongst *Transumo*, *Habiforum*, the *Atelier South Wing*, and the governmental *Platform South Wing*. With so much seeming interest in this new regional level, who was I to argue against it? It seemed more constructive for DRIFT – and thus for myself – to play into this 'discursive momentum', as it provided a new discourse on regional innovation and transformation that seemed to resonate with the transition (management) discourse on regional visions, experimentation, and up-scaling innovation. Retrospectively, however, I argue that going along with this 'South Wing' discourse was unwise, and might have played a role in the limited success of the transition arena. First, the South Wing discourse was a technocratic construct that had little to no connection to any regional or political identity, thus inherently unsuitable to gain bottom-up societal commitment. Second, this discourse had a highly *temporary* nature, essentially it concerned a new bureaucratic terminology that soon got 'out of fashion' (see section B.1), thus unfit to be used for a long-term vision and commitment. Third, the very concept of the South Wing was based on an economic perspective on regional innovation, intended to push an economic agenda for the region and focused on the clustering of 'main ports', 'brain ports', and 'economic competitiveness'. As such this discourse was unsuitable for a transition management process that aimed to focus on a sustainability vision, in which ecological and social concerns were to be equally important.

Considering the unsuitability of the South Wing concept and its lack of regional identity, it is not surprising that the focus ended up being on sector issues – i.e. spatial planning and mobility – rather than on specific regional challenges. Also given the fact that the main commissioning parties – i.e. *Habiforum* and *Transumo* – had this sector focus. One could also argue that the lack of 'governmental embedment' was partly caused by the unsuitable South Wing concept. For it was actually tried to embed the South Wing

transition arena in the provincial government of South Holland, in relation to the *South Wing Atelier* (which was part of the provincial government). However, as stated earlier, the South Wing concept had a temporary nature, and so did the *South Wing Atelier*, which was even entirely abolished before DRIFT's South Wing project was finalized. As described in section B.1., the new ministers of Spatial Planning and Mobility also discarded the wing-distinction, thus leaving a project with the name 'South Wing' in a sort of 'political void'. Based on all these observations, a possible lesson for transition management is to avoid temporary, bureaucratic, and technocratic constructs such as the South Wing discourse, and rather to play into more enduring discourses, networks, and regional identities.

B.2.4. Transition analysis, actor selection and discourse analysis

Another challenge in the South Wing project was the actor analysis, which was supposed to provide the basis for the actor selection of arena participants. The prescriptive transition management literature gives several guidelines for actor selection. The 10-15 members of a transition arena should be; 1) visionary frontrunners with necessary skills such as networking and strategic thinking, 2) a mixture of niche-actors and regime-actors (approximately 70% niche vs. 30% regime), and 3) a mixed representation of different sectors (government, business, NGO, knowledge, and 'intermediaries') (Loorbach 2007). Usually – i.e. in other arena processes and according to the prescriptive literature – actors are selected in cooperation between the 'transition management team' and the commissioning authority, based on their knowledge of the field and various actors therein (and with the help of the selection criteria mentioned above). However, in the case of the South Wing arena, given the lack of a clear commissioning authority, the selection of arena participants was left to the project-team, i.e. DRIFT researchers. This was supposed to occur on the basis of a 'transition actor analysis'.

Together with another DRIFT researcher, I was asked to make such a 'transition actor analysis'. We found the distinction between 'niche-actors' and 'regime-actors' hard to make without actually knowing the individual actors that seemed relevant for 'the South Wing region'. The very distinction between niche and regime was already hard to make at the organizational level, let alone at the individual level. There were numerous projects and respective individuals that claimed to facilitate innovation in the South Wing region, while at the same time being part of – or commissioned by – established government institutions or private parties, and/or reproducing prevailing 'regime-discourse'³³⁴. Moreover, the categorization of individuals in different sectors was also confusing, given the fact that the majority of individuals represented hybrid institutions that functioned at the intersection of different sectors. Given the lack of a clear method for actor-selection, the categorization of actors as presented in the first report of the South Wing project was rather random and inconsistent. Advisory bureaus, designers and architects, for instance, were mentioned under 'business', while it would be more logical to characterize these in terms of 'knowledge institutes' or 'government'.

³³⁴ This is one of the reasons why I decided to reformulate the niche and regime concepts in terms of power, as will be elaborately discussed in chapter 7.

I argue that a proper ‘transition actor analysis’, and subsequent systematic actor selection, requires an a priori discourse analysis of relevant networks in the fields, and how individual actors position themselves in these networks. I did carry out a superficial discourse analysis based on interviews with prospective arena members, on which basis I made an overview of agreements and disagreements amongst respondents regarding problems and solutions for the South Wing region. Although this discourse analysis was used as input for the first arena-meeting and for the first report, this obviously occurred *after* the arena participants had been selected and after ‘the regime’ and ‘the niches’ had been superficially characterized (e.g. ‘government so therefore regime’). Retrospectively, I argue that it would have been far more insightful and systematic to use a more in-depth discourse analysis as a method *beforehand*, to decide what the regime actually was (in terms of those institutions and individuals reproducing dominant discourse), where the relevant niches could be found (in terms of those organizations and individuals providing a new, resisting discourse), and how different individuals could be positioned therein (in terms of how they could be related to these dominant and innovative discourses).

The analysis that I gave in section B.1 on the prevailing discourses on the South Wing region, was based on analysis of numerous policy documents, projects documents, and participant observation in various network-meetings that were related to the South Wing region. It was striking to notice how little mention there was of these documents, projects and meetings within the transition arena meetings. Although I read these reports, analyzed these projects, and visited these meetings, there seemed to be no space or at least no systematic channel to apply those insights within the arena process. As such I often got the impression that the transition arena members were reinventing the wheel in arena discussions, without reacting to what was actually going on ‘out there’ in the field. As a result thereof it also remained unclear – both to insiders and outsiders – what exactly the transition arena had to offer to the outside world, be it to regional networks or the spatial planning sector. An a priori discourse analysis of relevant policies and activities in the South Wing, as *input* for the arena-meetings, would have enabled the arena members to position themselves more strongly vis à vis other activities in the field, and it might have motivated them to develop a vision or ‘agenda’ of which they knew that it was different and new. Before one can develop something new, before one even *wants* to invest time and energy in developing something new, one first has to know what is supposedly ‘old’, and what specifically is lacking therein.

B.2.5. A critical socio-spatial perspective on mobility

The most valuable lessons and insights in the South Wing project came forth from its final phase, when the focus was moved to the intersection between spatial planning and mobility in the South Wing. During that period, the DRIFT project-team was accompanied by a student, who focused on spatial planning and mobility and did an internship at DRIFT. This student ended up writing a very critical analysis of mobility challenges from a spatial and social perspective. Subsequently I used this critical and provocative analysis to evaluate how and to what extent *Transumo* projects provided insights on how to deal with the challenges between spatial planning and mobility. Both analysis were used as input for the final meeting of the Transition Arena (November 2008) and integrated in

DRIFT's final report on mobility and spatial planning, which was published one year later (Van Eijndhoven et al. 2009). We received various comments from arena participants in reaction to this analysis - both in the arena meeting and in individual emails - and there were several intense discussions between DRIFT-researchers and *Transumo*-representatives regarding the content of this analysis. In this section I want to report and discuss some of these reactions and discussions, focusing on one specific aspect of the critical analysis of the student; the 'spatial-mobility cascade'.

Based on his critical analysis of the mobility system, the student in question developed a spatial-mobility cascade (see figure below), as a supporting conceptual tool (for designers, planners and decision-makers) to rethink the relationship between spatial arrangements and mobility. The provocative problem analysis of the mobility system mainly critiqued car-dominance from a socio-spatial perspective. The student aimed to go beyond the 'usual suspects' in most mobility discussions (congestion, car technology, CO₂), by drawing attention for a more socio-spatial perspective on the problems of mobility (e.g. social exclusion and spatial occupation). In order to not only be critical but also constructive, the student also developed the contours of an alternative vision on sustainable mobility, by identifying several socio-spatial values that could function as 'guiding principles' to discuss sustainable mobility. These principles were 'summarized' and visualized in the 'socio-spatial' mobility cascade (see below).

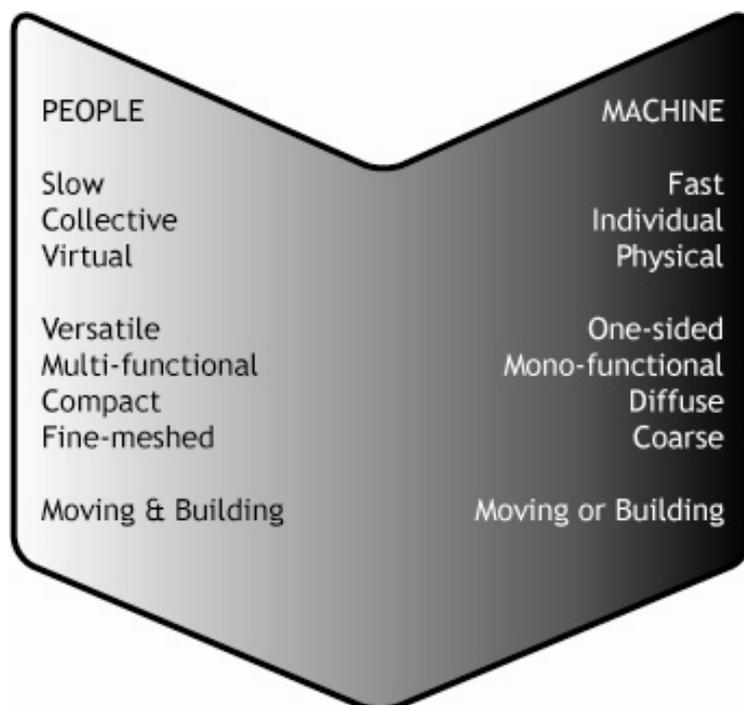


Figure 16. Socio-Spatial Mobility cascade (source: Eijndhoven et al. 2009, developed by Toon Zijlstra)

The cascade is 'socio-spatial' in the sense that the principles refer to social and spatial concepts (rather than explicit transport concepts). Essentially, the cascade consists of a dialectic overview of contrasting 'socio-spatial principles' regarding mobility options. The cascade also contained a normative prioritization (e.g. 'people before machine') that was

based on values of social well-being and spatial quality (rather than transport efficiency). The basic message of the cascade was to *first* consider mobility options that correspond with the principles in the left column, before considering options that correspond with principles in the right column. The student argued that the principles in the right column were often taken for granted and went unquestioned in the majority of mobility planning and investment practices. Therefore he argued that the principles in the left column needed to be prioritised in terms of (*re*)*considering* options that correspond with these principles, *before* moving on to options that fit in the right column.

The purpose of this argument was to *counter-balance* and ‘break open’ ingrained practices and prevailing doctrines on mobility and spatial planning. However, even though the student argued that certain *principles* need to be prioritized over others (e.g. people before machines, slow before fast), the cascade did not generically prescribe which *options* (e.g. modalities) are ‘better’. Obviously, which option is ‘best’ in a given situation (e.g. a region, city, street) depends on context-specific factors. The message of ‘slow before fast’ is not that constructing bicycle lanes is always and a priori better than building broader roads. Rather the message is to *consider* facilitating slow travel (i.e. walking or cycling) in a specific context, *before* automatically moving on to facilitate fast travel (e.g. driving). Often the challenge will be how to facilitate them both. The cascade primarily served to order and specify alternatives, and to ensure *that* alternative options *are* considered and discussed in planning and investment decisions.

Various versions of the spatial-mobility cascade were presented in different versions of DRIFT’s report. We received several comments from arena participants and *Transumo*-representatives in reaction to the critical analysis and spatial-mobility cascade. The reactions were mixed, ranging from enthusiastic praise to fierce critique. The most fervent criticism revolved around the strong normative orientation of the analysis, which was understandable as the analysis was purposefully normative and provocative. However, the interesting thing was that the critique on our normative orientation, often was followed by statements that in *themselves* were highly normative. For instance, several individuals commented that the principles of ‘slow’ and ‘collective’ needed to be replaced by other concepts, because they were ‘outdated’ and had ‘a negative image’. The ‘quality’ of the student’s analysis and spatial mobility cascade would supposedly ‘improve’ if the concepts of ‘slow’ and ‘collective’ would be ‘avoided’, and ‘replaced’ by more ‘neutral’ concepts. The irony in these comments was that although they criticized the student’s analysis for being normative, they simultaneously confirmed the student’s argument that the current way of thinking about mobility is based on a highly *normative* preference in favour of ‘speed’ and ‘individualisation’, and *against* ‘slow’ and ‘collective’ as ‘negative’ and ‘outdated’ ideas³³⁵.

Similarly, there were several claims that the student should celebrate the ‘positive’ effects of auto-mobility, and there was a tendency to downplay or even ridicule the student’s explicit worries about the negative effects of auto-mobility. One *Transumo*-representative

³³⁵ Fieldnotes [meetings nr. 132 and 138 appendix I]

wrote the following in his reaction: “economically we function quite well in the world and I dare to state that nobody is hindered by ‘the mobility system’ to work, to go to school, to the church/ mosque, to the hospital... (...) the social consequences of mobility – the positive ones, i.e. being able to enable freedom of movement as much as possible, are the starting point of [the Transumo] program”³³⁶. Moreover, it was argued that car-mobility was not ‘to blame’ because it was ‘derived’ from societal behaviour in general; that “auto-mobility is not a cause, but a consequence of behaviour”, and that the social exclusion of people that do not own a car is “not a choice of the mobility system, but a choice of the political public system”. These comments also demonstrate and confirm how practitioners fail to acknowledge how the physical, spatial, and cultural dominance of the car can partly *pre-determine* both political and behavioural decision-making. It was striking to notice how strongly the dominance of car-favouring discourse prevailed even in a group of people oriented at ‘sustainable’ mobility and ‘sustainability transitions’. Therein the negative *socio-spatial* effects of car-mobility were put aside as ‘normative’, while, in the mean time, the supposedly ‘scientific’ claims about transport efficiency were in fact based on normative presumptions about the ‘positive’ effects of car-mobility.

Despite of the critique on the student’s analysis and socio-spatial mobility cascade – these critiques primarily came from the *Transumo* representatives – several of the arena members complimented the student for his sharp and well written analysis. More importantly, the critical analysis and normative ‘cascade’ was highly provocative and triggered passionate debate. Unfortunately, however, this critical analysis was only presented in the final stage of the project and was only discussed in the very last arena meeting. In a way, it came ‘too late’ to really influence the transition arena process. Retrospectively, I wish the student had been involved in the South Wing project at an earlier stage, and that his provocative analysis could have been used from the beginning onwards. Especially because we also used the cascade to do a ‘quick scan’ of *Transumo*’s projects, which resulted in critical comments regarding *Transumo*’s orientation. Although there were some projects dealing with ‘social’ or ‘spatial’ issues, the far majority of the projects were oriented at optimising a mobility system that corresponds with the right column of our mobility cascade. There was a clear focus on the machine (i.e. technology, or how to manage technology), on fast, individual and physical travel, and a one-sided and mono-functional way of thinking about transport in spatial context. We stated this in our report, extensively formulating the ‘white spots’ in the *Transumo* program and providing suggestions on how to fill these white gaps. To our surprise, the representatives of *Transumo* seemed quite enthusiastic about this critical analysis of their own program and with a few exceptions, they acknowledged most of our identified ‘white spots’ and agreed with our suggestions for improvement³³⁷. However, unfortunately, just like the South Wing project, the *Transumo* program was also reaching its finalizing stage, and as such it was too late to start up new projects.

The main insight that I gained from this experience, was to see the powerful role of a critical, normative, and provocative *substantive* analysis in a transition arena process.

³³⁶ Written reactions *Transumo* to DRIFT-report [document nr. 65 appendix III]

³³⁷ *Ibid*

Although transition management is by its nature critical and provocative (regarding prevailing discourses), I had always interpreted this mainly in *process* terms. During most of my action research activities, I tried to avoid imposing my own critical or normative understanding of particular substantive issues within the mobility sector, for I believed that this understanding and interpretation was mostly supposed to come from the practitioners themselves. However, the power of the critical analysis provided by the student intern was that it was very normative, but at the same time very specific on substantive problems in the mobility system, including an extensive list of ‘facts’ and ‘statistics’ to support the normative arguments, which helped to provoke fierce discussion among arena members on fundamental issues, which had not been discussed so far. I believe that if this provocative and critical analysis of socio-spatial problems in the car dominated mobility system – accompanied by the normative ‘socio-spatial mobility cascade’ – would have been available as input for the transition arena at an earlier stage, it would have triggered more fundamental and cutting edge debate amongst the participants. I argue that this in turn would have increased the motivation and commitment of participants to develop an alternative vision on mobility and spatial planning in the South Wing region, and to also carry out this vision to others, and to translate it in to action. I come back to this issue in chapter 8 on transition management when discussing action research insights and lessons.

PART III

THEORY & TOOLS

CHAPTER 7.

Theorizing Power in Transition

This chapter is dedicated to theorizing the role of power in sustainability transitions. As explained in chapter 2, this occurs partly deductively and partly inductively, as well as by engaging with additional literature on sustainability, power, and transitions. First, some basic transition concepts are deductively ‘translated’ in power terms, in reference to the conceptual power framework presented in chapter 3. Second, I use the empirical insights of the previous chapters, in combination with relevant literature, to discuss, broaden, and deepen some conceptual and theoretical dilemmas, and to reconsider the initial reconceptualization of transition concepts (sections 7.2 to 7.6). Finally, in section 7.7., I use these concepts to formulate hypotheses on power in transition, and present an analytical framework to study power in transition, which integrates the various concepts. Therein I also specify how the power-in-transition framework can be used for empirical analysis and how this relates to the state-of-the art in transition studies.

*“Power, as a symbolic medium, is like money in that it is itself ‘worthless’,
but is accepted in the expectation that it can later be ‘cashed in’,
this time in the activation of binding obligations.*

*If, however, ‘power-credit’ has been extended too far,
without the necessary organizational basis,
then attempting to invoke the obligations
will result in less than a full level
of performance, inhibited by
various sorts of resistance.”*

Parsons ([1963]2002:106)

7.1. DEDUCTIVE TRANSLATION OF TRANSITION CONCEPTS IN POWER TERMS

The most ‘power-laden’ concepts in transition studies concern the multi-level framework and the distinction between *regimes*, *niches*, and *niche-regimes* (see chapter 3). I propose to reconceptualize this distinction in terms of different types of power exercised by different groups of actors. This is not an absolute distinction, for no group of actors ever exercises only one type of power. The distinction between niches, regimes, and niche-regimes can be made in terms of their relative *focus* on a specific type of power exercise. Regimes can be defined as groups of actors that primarily exercise *reinforcive* power, niches as groups of actors that mainly exercise *innovative* power, and niche-regimes are groups of actors that primarily exercise *transformative* power (see table below). *Systemic* power refers to the collective power exercised by regimes, niches, and niche-regimes, and the extent to which these exercises of power amount to the sustained survival of a societal (sub)system. The landscape level refers to exogenous factors and events that influence and determine the conditions under which a societal subsystem can survive. This means that systemic power includes the capacity to react and adapt to landscape developments. The ‘persistent problems of unsustainability’, as referred to in transition studies, can be conceptualized as (perceived) disruptions of such systemic power.

Transition Level	Type of Power Exercise	Working Definition
Regimes	Reinforcive	... groups of actors that reinforce and reproduce existing institutions and structures
Niches	Innovative	... groups of actors that (mainly) invent and create new resources
Niche-regimes	Transformative	... groups of actors that (mainly) invent and develops new structures and institutions
Landscape	Systemic	... exogenous factors and events that collective groups of actors react and adapt to when exercising systemic power (i.e. enabling the sustained survival of a societal system)

Table 11. Multi-level framework in terms of different types of power exercise

The power relation between *niches*, *regimes*, and *niche-regimes* is primarily one in which the different groups of actors exercise a *different type of power*. The most relevant question is how these different types of power exercise interact with one another, and to what extent there are synergetic and/or antagonistic power relations (to be discussed further later on). Obviously, there are also other types of relations between niches and regimes, in terms of one exercising ‘more’ power than the other, or one exercising power ‘over’ the other. The important consequence of the power conceptualization presented here, however, is that it is not necessarily the case that regimes have ‘more’ power than niches or niche-regimes, nor that regimes have power ‘over’ niches or niche-regimes. The fact that regimes – by definition – exercise more *reinforcive* power, may cause niches and niche-regime to become dependent on the regime, thus enabling the regime to exercise power ‘over’ them. However, it also works the other way around; regimes may depend on niches and niche-regimes for the invention and creation of new resources, new structures

and institutions, and thus niches and niche-regimes can also exercise power 'over' regimes. Niches exercise 'more' *innovative* power than regime do, while niche-regimes exercise 'more' *transformative* power than regimes do. While the regime is inherently constructed in such a way that it invests most of its energy in maintaining the 'status quo', niches and niche-regimes have the willingness and the capacity to invest in those resources, strategies, and skills that are necessary to create new things. Because niches, niche-regimes, and regimes can exercise power in different ways, they co-exist, each in their own 'territory', with their own strengths and weaknesses. On the other hand, they can also compete, cooperate, support, or restrict one another.

A transition can be reconceptualized in these power terms, as a two-fold process. First, innovative power and transformative power enable and support one another (i.e. niches and niche-regimes have a synergetic relation with one another), while resisting and restricting reinforce power (i.e. niche and niche-regimes have an antagonistic relation towards the regime). Second, reinforce power is used to enable and support transformative power, either by a new regime or by the existing regime that decides to support niches and niche-regimes. Or in other words; first new resources and new institutions and structures are invented and developed, second the distribution of new resources and the creation of new structures and institutions is established, thereby (partly) replacing the distribution of old resources, and replacing old institutions and structures. These two phases can be further divided and differentiated in a total of four phases, which can be related to the 'multi-phase framework' found in transition studies (see chapter 3), in which the ideal-type transition process can be described as follows.

The *starting point* of a transition can be redefined as the anticipation of a disruption of systemic power, i.e. actors fear that they are losing capacity to safeguard the sustained survival of the system. In the *pre-development phase* of a transition, niche-actors exercise innovative power by inventing and creating new resources (that offer solutions for how systemic power can be restored). Niches cooperate and cluster, forming niche-regimes that (try to) exercise transformative power, by (trying to) develop new structures and institutions. Regime-actors react by trying to 'absorb' these niches and niche-regimes, so that new resources and new institutions do not challenge but rather reinforce the status quo. Or in other words, the regime is looking for a 'synergetic' relationship with niches and niche-regimes, in which their innovative and transformative power is used to support the regime's reinforce power. If the regime 'succeeds' in absorbing niches and niche-regimes, a so-called 'lock-in' occurs. If, however, niches are able to resist such absorption by the regime, they become a 'threat' to the reinforcement of existing institutions and structures. Such antagonistic relations at the end of the pre-development stage are a necessary condition for a transition to continue.

The *take-off* is the phase in which the disruption of systemic power is manifested; a contingency takes place which the regime cannot deal with, which may result in institutions collapsing or severely weakening. The different 'transition patterns' (de Haan 2010, Loorbach & Rotmans 2010) can be redefined in terms of different types of 'systemic power disruptions'. A 'top-down' disruption is caused by exogenous landscape events (e.g. an international crisis, an epidemic outbreak, a natural disaster, or the emergence of

a new foreign market). An ‘internal’ power disruption is caused by a clash between regime-actors (e.g. a cabinet crisis, an election period or a competitive battle between established companies). A ‘bottom-up’ power disruption is caused by niches and niche-regimes challenging the regime (e.g. a technological innovation destroying the market for existing technology, or environmental activists publicly denouncing a certain company or industrial sector on moral grounds). The take-off stage is one of struggle and antagonistic power relations; the regime tries to survive by increasing the dependence of others on the regime, there is an internal competition over resources amongst regime-actors, and / or there is a highly antagonistic dynamics between niches, niche-regimes, and regimes, in which innovative and transformative power are exercised to disrupt reinforcing power, and *visa versa*. If, during this power struggle, the regime succeeds in reclaiming its initial dominant position and controlling the contingency, a so-called ‘back-lash’ occurs; the second ‘reverse transition path’. If, however, the regime fails in reclaiming its initial dominant position, the next phase of the transition can be entered.

The *acceleration phase* is characterized by a synergetic dynamic between innovative and transformative power exercise; niches and niche-regimes enforce one another, thereby gaining more access to resources, and both new and old resources are coupled to new structures and institutions (e.g. new and old technologies are embedded in new infrastructures, new business models, and new legal institutions). As the regime’s grip and resistance has been disrupted in the take-off stage, niches and niche-regimes have more space to operate. In the *stabilization phase*, these niche-regime-actors also exercise reinforcing power to establish a new distribution of resources, thereby forming a *new regime*. As such there is a synergetic power dynamics between reinforcing and transformative exercises of power, as they both enable the establishment of a new structures and institutions. A phase of reconfiguration takes place between these new regime-actors and old regime-actors. At the end of the reconfiguration process, these actors together have formed a new regime. This new regime exercises reinforcing power to further establish itself. At the end of the transition the ‘power disruption’ has been restored and systemic power is exercised to safeguard to sustained survival of the system. In systemic language; ‘a new dynamic equilibrium is reached’, until the day that another great disturbance comes along.

So far the deductive translation of transition concepts in power terms. This deductive reconceptualization has been based on taking assumptions underlying transition theory – as presented in the ‘systems theory school’ (De Haan 2010, Loorbach & Rotmans 2010) – and translating these in terms of the power concepts presented in chapter 3. Parts of this deductive reconceptualization were presented in an earlier publication (Avelino & Rotmans 2009). Although this does provide a conceptual story-line on power-in-transition, it is obviously highly abstract. Can we recognize this abstract story-line in the empirical observations discussed so far? No. Does this conceptual story-line help to interpret the empirical observations so as to gain increased understanding of power in sustainability transition? Hardly. While one may argue that this is due to a wrong selection of cases, I argue that it is more interesting to explore how this conceptual story-line can be adapted and enriched to such extent that it does provide us with an analytical tool to interpret empirical observations as the ones studied here. Moreover, I also argue that knowing

which cases would be (more) appropriate, requires a more grounded story-line that speaks to empirical phenomena. While the deductive story-line on power-in-transition does provide a conceptual basis, it now needs to be adapted and enriched by empirical phenomena and theoretical discussion. The next sections take up this challenge.

7.2. RECONSIDERING SYSTEMIC POWER AND THE MULTI-LEVEL FRAMEWORK

In all case-studies we observed how practitioners struggled with the concept of sustainability. One of the main reasons for these struggles is that transport is not an end in itself; it serves society and it is derived from its needs. Hence it is difficult, if not impossible, to characterize 'sustainable mobility' or 'sustainable logistics', without first having an idea of what a 'sustainable society' is. A 'sustainable transport sector' is a sector that serves a sustainable society. All three case-studies, either explicitly or implicitly, reached this conclusion: *Transumo* spoke of a mobility system that serves a sustainable society, the *A15-project* spoke of a transport system that served a sustainable region, and the *Sustainable Logistics program* spoke of a logistical sector that served a sustainability-oriented industry. However, in discussing what a sustainable society, region, or industry would be, the case-studies primarily focused on transport issues. Aspects of sustainability that did not fit within these sector-boundaries were either ignored or placed aside, the conclusion being that they went 'beyond' the program or project. I argue that these sector-boundaries were a major problem in all three cases.

7.2.1 Questioning functionalist system boundaries

Sector-boundaries restrict the possibility of questioning prevailing paradigms, and do so *at two levels*. First, staying within sector-boundaries limits the possibility of questioning prevailing paradigms at a societal level. In the three case-studies we observed that many ideas that seemed 'innovative' within the limits of the transport sector, were in fact in line with prevailing neo-liberal trends involving new public management, privatization, and environmental policies based on market principles. Second, holding on to sector-boundaries hampers the questioning of paradigms that are *inherent* to these sector-boundaries. One can argue that holding on to existing system boundaries is in contradiction with the philosophy of system innovation. Perhaps the most fundamental form of system innovation is questioning and altering the very boundaries of the system. Is 'mobility' or the 'transport sector' the right starting point to change the mobility system? Can one really change dominant mobility paradigms without questioning the very concept of mobility?³³⁸

³³⁸ For instance, Jonathan Levine argues that transportation should not be evaluated in terms of mobility but rather in terms of accessibility [workshop on mobility transitions, meeting nr. 115 appendix I]. Mobility is by definition a means to an end, a way to achieve what we need, and it is therefore an inherently unsuitable concept to *redefine* our needs (which is necessary for sustainability discussions). According to Levine, we should shift planning towards the concept of accessibility, as this 1) would be a better interface between land use planners and transport planners and 2) would force us to redefine our needs and thereby discussing sustainability, for instance by asking to what extent a specific region needs to be 'accessible'. Whether or not one

Another problem with sector-boundaries is that it can lead to a sense of powerlessness. On several occasions, participants in the case-studies emphasized that the transport sector was determined by greater forces such as globalization and energy trends, and that a transition to sustainability could never come from within the transport sector. Staying within sector boundaries can have a negative effect on intrinsic motivation, as individuals lack a sense of impact (their role in this larger societal system seems insignificant) and a sense of meaning ('sustainable transport' is meaningless if not related to societal sustainability more broadly). Moreover, holding on to sector-boundaries causes a tendency to think in terms of 'what is good for the sector', rather than in terms of 'what is good for society'. All three case-studies ultimately aimed to enable *systemic power*, but this was focused on the systemic power of the transport sector (i.e. enable the collective exercise of power to improve the functioning of (a part of) the transport sector). This focus on systemic power *at the sector-level* distracted from (other types) of power exercises that are necessary to reach broader societal goals. In a way, *the systemic power of the sector became a goal in itself*. As stated earlier, in all case-studies, discussions on sustainability were ignored if they did not fit within the frames of the sector-orientation, and many unsustainable paradigms *inherent* to the transport sector were confirmed.

In contrast to the three case-studies, the intermezzo on the *South Wing region* described a project that took a regional approach. Rather than focusing on one specific sector, the project focused on the interaction between different sectors (spatial planning, housing, mobility) within a specific region. As a result, sustainability discussions revolved more around the problems and needs of the region and the people living in it (rather than only focusing on the problems and needs of one specific sector). The irony, however, was that both practitioners and researchers still tended to primarily look at these regions from a sector perspective (albeit various sectors rather than just one). As a result, many of the limitations of sector boundaries also applied to this regional approach, in the sense that existing sector boundaries were not questioned and many of the paradigms *inherent* to these sectors were confirmed. Moreover, while the transition researchers involved in this project in theory aimed to reconsider how different sector activities could better serve the needs of the region, in practice this regional project (as initiated by the government) was essentially about how the region could be adapted to better 'serve' 'economic growth'. The very concept of 'the South Wing' was based on the government's desire to define new regional boundaries that would make it easier to 'manage' sector-related problems (e.g. transport). The region was primarily defined and discussed in terms of its 'international position' and its capacity to 'compete' and 'keep up' with economic growth. Even environmental issues and 'quality of life' were primarily framed in terms of 'attracting business' and 'higher incomes'. As discussed in the intermezzo, the regional boundary was primarily a 'technocratic construct' that did not correspond with the cultural or social identities of the people inhabiting the region. On the one hand, the creation of new regional boundaries and corresponding new governance levels can be

agrees with Jonathan Levine, the point is that by starting of with existing sector boundaries, one misses an important aspect of transition, namely the questioning of these sector boundaries.

interpreted as the exercise of transformative power (i.e. developing new structures and institutions). On the other hand, the intermezzo on the South Wing region demonstrates that such new regional and governmental levels can also be used to reinforce existing economic agendas, technocratic management, and neo-liberal discourse. Therein a region is primarily seen as 'sustainable' when it can 'compete internationally' and 'keep up' with economic growth, by 'attracting' more business and higher income groups.

I argue that these problems with both the sector focus and regional focus lie not so much in them being sectoral or regional, but rather in them being based on functionalist boundaries of subsystems. While sector boundaries are inherently functionalist, regional boundaries can also be functionalist when they are based on defining the 'functional coherence' of a region (as was the case in the South Wing case). The problem with such functionalist boundaries is that they focus the attention on sustaining and maintaining the functioning of particular subsystems, without questioning whether these subsystems should be functioning in their current form in the first place. The persistent unsustainability problems in the world today can be seen as a result of the way in which subsystems function and interact with one another. It is thus utterly ironic to translate sustainability goals in terms of *sustaining the functioning of current subsystems*.

7.2.2. Reconsidering systemic power

Based on this discussion, I propose to reconsider the definition of 'systemic power' as presented in chapter 3. Systemic power was defined as the capacity of actors within a system (a sector or region) to mobilize resources for the sustained 'survival' of that system, including the capacity to 'adapt' to contingencies and other landscape developments. This definition of systemic power was inspired by the functionalist subsystem focus underlying transitions studies, which I now question and criticize. While functionalism was the leading theoretical tradition in sociology for a long time, its premises were fiercely criticized and abandoned in the 80s. Functionalism "holds that society is a complex system whose various parts work together to produce stability" and "attributes to societies social qualities (...) as though societies have 'needs' and 'purposes'" (Giddens, 2001:17). Critics argue that concepts such as 'needs' and 'purposes' "make sense only when applied to individual human beings" (ibid.). Another common critique on functionalism is that it "unduly stresses factors that lead to social cohesion, at the expense of those producing division and conflict", and that this focus on stability and order "means that divisions or inequalities in society – based on factors such as class, race and gender – are minimized" (Giddens, 2001:17). As a result of these and other critiques, functionalist perspectives were replaced by approaches that pay more attention to conflict and social action perspectives (ibid.) Transition studies include various epistemological traditions that have been referred to as a 'revival' of functionalism, e.g. systems theory, structuralism, and evolutionary theory. The aim of transition studies is to study how the functioning of societal systems *change* and to facilitate actors to *transform* the way in which societal systems function. In the systems perspective on transitions, a societal subsystem is defined as "a part of society that can be attributed a functioning and functioning is the way a societal system meets a societal need" and it is argued the "*raison d'être* of a societal system is its fulfilling of a societal need" (de Haan & Rotmans

2008: 4,8), and that cities and regions can also be functionally defined, as parts of society that can be attributed a functioning in terms of fulfilling societal needs. Many transition researchers categorize and organize their empirical objects according to functional subsystems (sectors or regions).

Based on this functionalism I also approached sustainability in terms of ‘a sustained survival of a societal system’, and argued that when actors believe that the existing structures and institutions are not appropriate (anymore) to safeguard to survival of a system, they develop new structures and institutions (i.e. exercise transformative power), in order to sustain the system in the long term, thereby contributing to a more sustainable societal system. However, I now argue that when existing functional subsystems remain unquestioned and taken for granted, and when the aim is to maintain the survival of these subsystems, it is actually inherent that reinforcing power is exercised to reproduce the basic structural functions and delineations of the system. As such it seems inappropriate to conceptualize sustainability transitions in terms of safeguarding the ‘survival’ of existing subsystems. For the question should *also* be whether and to what extent existing (sub)systems *can* and/or *should* be maintained. Obviously, we will always need *some sort of a* transport system, i.e. a way to move people, goods and services around. The question is, however, whether and to what extent the *current* transport system – ever growing, globalized, taken for granted – is ‘sustainable’. This question can only be answered by considering how the current transport system impacts other systems, our environment and our overall way of life, and, if necessary, to consider what *alternative* transport systems would be possible and desirable. As such ‘a transition to sustainable mobility’ is not just about *sustaining* the *current* transport system in the long-term, but also about *creating* an *alternative* transport system.

So how can we reconceptualize ‘systemic power’ as something different than the mere safeguarding of existing ‘systemic functions’? I propose to redefine systemic power more generally as the *collective capacity of actors to create, renew and/or maintain functional systems that correspond with their perceived (collective) needs and desires*. As such, this definition includes the capacity of actors to *choose* in which systems they operate. Rather than positioning actors as ‘prisoners’ of existing systems that entirely depend on the ‘survival’ of those systems, and cannot do nothing else than maintaining them, this new definition positions actors as potential ‘creators’ of new functional systems. Therein actors do not merely ‘adapt’ to landscape developments, they can also influence and (slightly) redirect landscape developments, for instance by deviating from a landscape trend and demonstrating that they can still survive. Whether or not one believes that it is desirable for actors to try and reshape and create systems and influence landscape developments, the point remains that creating and reshaping systems and influencing landscape developments, is the ultimate exercise of human power, a power which I propose to call *systemic power*.

This reconceptualization of systemic power also implies a reconsideration of ‘the landscape’ in power terms. Transition researchers tend to characterize the landscape in terms of *exogenous* and *dominant* macro-trends. However, I argue that if the landscape refers to slow developments at a high level of aggregation, these do not necessarily need

to be dominant, nor do they need to be treated as exogenous. Rather, we can conceptualize the landscape as *including* ‘counter-trends’, i.e. slow developments with a high level of aggregation that run *counter* to the dominant trends. Moreover, we can acknowledge the (collective) capacity of actors to (re)shape these trends, by either reproducing dominant trends or challenging them by creating counter trends. By doing so we can unpack the ‘black box’ of the landscape, and differentiate how actors engage with landscape trends, rather than treating these as given exogenous factors.

The collective capacity of actors to challenge dominant landscape trends, relates to the notion of social (counter) movements. In recent years several authors have emphasized the need to pay more attention to the role of social movements in sustainability transitions (Seyfang & Smith 2007, Smith 2006, 2007, forthcoming, Haxeltine & Seyfang 2009, Avelino & Kunze 2009). In a study of car dominance, Zijlstra and I contrasted dominant landscape trends that reinforce car dominance against *anti-car* movements, and we conceptualized these anti-car movements as ‘counter-movements’ at the landscape level (Zijlstra & Avelino 2012). The same authors that emphasize the importance of social movements, also call for more attention for ‘grassroots’ innovations in sustainability transitions, and civil society more generally. Loorbach and Rotmans (2010) have proposed to add two levels to the multi-level framework, one being the level of ‘niche-regimes’, the other being the ‘undercurrent level’, referring to social movements, activist groups and niches that ‘exert pressure on niches or on the regime’. Smith has studied the interaction between grassroots innovations and mainstream practices, in terms of the interplay between ‘radical niches’ and regimes (2006, 2007).

7.2.3. Reconceptualizing the multi-level framework in power terms

So how can these concepts of ‘social (counter)-movements’, ‘undercurrents’ and ‘radical niches’ be related to the conceptual power framework? First, if there is such a thing as a ‘radical’ niche, there must also be a counter-part, i.e. a ‘moderate’ niche. Similarly, a distinction can be made between ‘radical’ niche-regimes and ‘moderate’ niche-regimes. I propose to conceptualize the distinction between ‘radical’ and ‘moderate’ in relation to landscape trends. ‘Radical’ is to challenge dominant trends and adhere to counter trends. ‘Moderate’ is to support or go along with dominant trends. When relating this to the concept of power dynamics (synergetic vs. antagonistic), we can define ‘radical’ as *having an antagonistic relation with dominant trends* and ‘moderate’ as *having a synergetic relation with dominant trends*. On that basis we can extend the power definitions of regimes, niche-regimes, and niches.

A **regime** has been defined as a group of actors that exercises *reinforcive power*, i.e. reproduces and reinforces existing structures and institutions. We can add that regimes typically have a *synergetic relation with dominant trends* at the landscape level; they enable and support the continuation of these dominant trends and *avoid overt antagonism* towards them. A **niche-regime** has been defined as a group of actors that exercises *transformative power*; i.e. develops new structures and institutions. Therein a distinction can be made between ‘moderate’ and ‘radical’ niche-regimes. A **moderate niche-regime** has a *synergetic relation with regimes* (and thus indirectly with dominant

landscape trends); it supports and reproduces existing regimes, it enables the continuation of dominant trends, and it *avoids overt antagonism towards regimes*. In contrast, a **radical niche-regime** has an *synergetic relation with undercurrent (counter-)movements* and an *antagonistic relation with regimes and dominant trends*; it challenges, criticizes and counteracts existing regimes, avoids and resists the continuation of dominant trends, and strengthens undercurrent (counter-)movements.

A **niche** has been defined as a group of actors that exercises innovative power, i.e. invents and creates new resources (e.g. a new concept, technology, or currency). A **moderate niche** has a *synergetic relation with regimes* (and thus with dominant trends), in the sense that its new resources are embedded in existing structures and institutions that reproduce dominant trends. In contrast, a **radical niche** has an *antagonistic relation with regimes*, and a *synergetic relation with radical niche-regimes*, in the sense that its new resources are embedded in new structures and institutions that strengthen undercurrent (counter-) movements, and thereby challenge dominant trends.

The **landscape** has been defined as the level of aggregation at which *systemic power* is exercised, broadly defined as the *collective* exercise of power by actors. Therein a distinction can be made between the collective exercise of power that reproduces **dominant trends** at the landscape level; this is *the collective exercise of reinforcing power* by the ‘overall majority’, by regimes but also by their ‘followers’, i.e. average businesses, consumers and voters, ‘the masses’. These masses help to sustain existing systems to continue to function under existing paradigms. In contrast, **undercurrent (counter-)movements** refer to the collective exercise of power that challenges and countervails dominant trends; this is the *collective exercise of transformative power* by critical masses and social movements, including critical ‘consumer-citizens’, entrepreneurs, and activists. These undercurrent movements (strive to) create new, alternative societal systems that function in a different manner, and under different paradigms.

When we synthesize these concepts, we can draw a new multi-level picture, which I call the ‘multi-level power-in-transition framework’, Multi-PIT in short (see picture below, in which the arrows represent synergetic relations between different groups of actors). When using this new multi-level picture to look at the empirical observations in this dissertation, the projects and programs under study can be best characterized as ‘moderate niche-regimes’. They predominantly exercised transformative power, while having a synergetic relation with regimes, thereby reproducing dominant landscape trends.

Having said that, the point of the Multi-PIT framework is not to just position cases therein, by characterizing them as a particular entity, e.g. ‘a moderate niche-regime’. Rather, the interesting point is to explore how such a ‘moderate niche-regime’ *interacts* with other groups of actors, both radical and moderate, and also how the nature of its power exercise can change through time (e.g. how a niche-regime can turn into a new regime). The next section will further discuss this in terms of power relations and a distinction between ‘passive’ versus ‘active’ power exercise.

The irony is that even though the programs and projects did not directly mobilize technological artifacts themselves, they still had a ‘technocratic’ approach³³⁹. The case-studies on *Transumo* and the *A15-project* demonstrated a technocratic approach towards sustainability; even though they both explicitly aimed to go beyond purely technological solutions, their set-up, approach, and ideas can be described as highly technocratic. Even the *Sustainable Logistics program* can be characterized in technocratic terms. Despite of its attention for ‘spreading awareness’ on sustainability, and even though it overtly distanced itself from scientific and technological discourse, it still had a technical, instrumental approach to ‘sustainable logistics’ (i.e. developing ‘measuring instruments’ and ‘standard criteria’).

From a power perspective, the problem with technocratic approaches lies in their a-political nature, or rather, their illusion of being a-political. The projects and programs under study primarily looked for synergetic power dynamics with other actors, while antagonistic power dynamics were avoided. In that context it was not surprising that these programs and projects did not develop their *own* vision on sustainable development. In the three case-studies sustainability discourse was primarily taken on because this seemed to be an emerging political trend that the transport sector *had* to go along with. The political discourses on sustainability that *already existed* were taken up without being questioned. Sustainability was not approached as a political issue to be debated and confronted with participants with different backgrounds. Rather, sustainability was approached as something to be ‘operationalized’ for the transport sector. The programs projects in our case-studies positioned themselves as ‘neutral’ actors facilitating others to exercise power to reach sustainability goals.

7.3.2. Active vs. passive power exercise and power relations

All this implies adaptation of the conceptual power framework. In addition to the proposed power typology, a distinction can be made between the ‘passive’ and ‘active’ exercise of power. In the former case the focus is on enabling the exercise of power by *others* (i.e. enabling others to mobilize resources), in the latter case the focus is on exercising power oneself (i.e. mobilizing resources oneself). Such an active exercise of power includes not only the mobilization of mental and monetary resources, it also *explicitly includes the mobilization of physical resources*, e.g. artifacts and natural resources. For instance, a *passive* exercise of transformative power involves the development of new structures and institutions, *without* actually *using* these new structures and institutions to mobilize and redistribute (physical) resources. An *active* exercise of transformative power involves both the creation of new structures and institutions, as well as *using* these new structures and institutions to mobilize and (re)distribute resources, explicitly including physical resources (see table below). When applied to the empirical observations; the projects and programs under study primarily

³³⁹ Keep in mind that technocratic is not the same as technological. The term ‘technocracy’ refers to a situation in which scientists, engineers and other experts with ‘technical knowledge’ have a significant amount of (political) power. Therein technical is not necessarily technological, it rather refers to rational, functional, instrumental, scientific and so on.

mobilized ideas and concepts for new institutions and structures, without actually materializing these new ideas by mobilizing physical resources. As such, we can characterize these platforms, programs, and projects not only as ‘moderate’ but also as ‘passive’ niche-regimes that primarily facilitated the exercise of power *by others*.

Type of Power	Passive Exercise	Active Exercise
Innovative	<i>Inventing</i> new resources	<i>Creating / materializing</i> new resources
Reinforcive	<i>Reproducing</i> current structures and institutions	<i>Using</i> current structures and institutions to <i>mobilize and distribute</i> resources, including physical resources
Transformative	<i>Developing</i> new structures and institutions (or <i>criticizing</i> current ones).	<i>Using</i> new structures and institutions to <i>mobilize and redistribute</i> resources, including physical resources
Systemic	Collective exercise of passive power, resulting in passive, <i>discursive</i> reproduction or challenging of landscape trends	Collective exercise of active power, resulting in active, <i>physical</i> reproduction or challenging of landscape trends

Table 12. *Passive vs. active exercise of power*

This *passive* exercise of power (i.e. the limited mobilization of physical resources) has consequences for power *relations*. Imagine that actor A develops a concept for a new technology or a new institutional arrangement. If A leaves it up to B to actively mobilize and *physically* materialize this new technology and/or new institutional arrangement, it is essentially B who determines the ultimate type of power that is exercised. If B uses the new technology or new institutional arrangement to reproduce and enforce existing institutions, structures, and paradigms, B is using the (passive) innovative and transformative power exercised by A, in order to (actively) exercise reinforcive power. Hence innovative and transformative power are ‘absorbed’ by reinforcive power. If, however, A is capable of actively mobilizing and physically materializing its newly developed resources and institutional arrangements, A can safeguard that they are used for the active exercise of transformative power. Although A may not be able to entirely prevent B from still using the new resources and institutional arrangements to exercise reinforcive power, A can more effectively resist such reinforcive power (i.e. have an antagonistic relation with B), if he *himself physically materializes* the exercise of power through the possession and active mobilization of *physical* resources. We can also then apply this to the typology of power relations. In the projects and programs under study, power relations were dominated by dependence (on commissioning authorities and/or certain stakeholders), competition/ co-existence (both amongst internal participants as well as between projects and programs), and synergy (with transport regimes) (see table below). These power relations seemed to mutually enforce one another: competition/co-existence within and between niche-regimes weakens their position towards regimes and increases their dependence and (need for) synergy with regimes. This relates to a more widespread tendency in sustainability discourses focused on ‘win-win’ strategies, public-private partnerships, and economic competition.

Power relation type	Manifestation of power relations		
<i>Power 'over'</i>	mutual dependence	one-sided dependence	Independence
<i>'More / less' power to</i>	cooperation	competition	co-existence
<i>'Different' power to</i>	synergy	antagonism	neutrality

Table 13. Power relations observed in empirical case-studies

This in turn can be related to the interaction between radical or moderate groups of actors. In theory, one would expect that when projects and programs have similar goals (e.g. a more sustainable society), they will tend to cooperate and support one another. However, in the projects and programs under study, it seemed more that the niche-regimes did not cooperate, but that they rather had a competitive or co-existent relation, i.e. either competed with one another or ignored one another. As for social (counter-) movements and more 'radical' niche-regimes and niches, the moderate niche-regimes under study seemed to ignore them all together. It seemed that the moderate niche-regimes under study wanted to explicitly distance and distinguish themselves from more radical groups of actors, in order to safeguard the synergetic relation with the regime; as if they were saying to the regime: 'we are not against you, our sustainability discourse is different from those antagonistic activists groups, our proposals can work in your favor'.

There are several obvious advantages to having a synergetic and mutual dependent relation with the regime, as it helps fulfilling some of the conditions of power (access to resources, skills, and strategies), and enables the exercise of reinforcing power to establish and standardize new structures and institutions. There are however also disadvantages to this synergetic and mutual dependent relation with the regime, namely that the niche-regime ultimately becomes a medium to further strengthen and support reinforcing power. One way to deal with this risk would be for moderate niche-regimes – as the projects and programs studied in this thesis – to stay (more) 'in touch' with both radical niches and radical niche-regimes, as well as with social (counter) movements. This is an additional insight to Smith's analysis of the interaction between radical niches and regimes. Smith (2006, 2007) argues that radical niches need to be flexible in terms of being both radical and reforming; while some niche elements are transferred to the mainstream (i.e. adopted by regimes), more radical components of the niches are 'kept alive' by committed actors that 'remain advocates for more radical system innovation' and continue 'radical experimentation'. I argue that also niche-regimes need to be flexible and try to be both moderate and radical, by cooperating with their 'antipodes'; i.e. radical niche-regimes that cooperate with moderate niche-regimes, and visa versa.

While Smith suggests that the only way for radical niche to 'mainstream' its ideas is through 'regime-translation', I argue that there might also be an alternative, that being to 'upscale' innovations through a cooperation with radical niche-regimes (i.e. actors that develop new structures and institutions and have an antagonistic relation with regimes),

rather than through a direct cooperation with regimes. An example to illustrate this abstract statement: linking alternative energy technologies to new institutional and financial arrangements, such as user cooperatives or joint consumer purchasing. Rather than the alternative energy niche depending on existing energy companies to market its new technologies, the alternative energy niche can cooperate with niche-regimes that develop new institutions and financial arrangements to distribute these new energy technologies amongst citizens. I would call these niche-regimes ‘radical’ in the sense that they challenges dominant landscape trends such as privatization and individualization.

7.4. POWERLESSNESS AND THE ETHICS OF POWER

In the previous section it was discussed how the projects and platforms under study did not position themselves as groups of actors that exercised power, but rather as platforms that would facilitate *other* actors to exercise power. The irony, however, is that many of these ‘other’ actors do not perceive themselves as having the power to achieve sustainability. As discussed in the intermezzo on Dutch mobility discourse; in the numerous interviews and conversations that I held through out the years, it was striking to note that when asked about power relations in the transport sector, people always referred to the power of *others*. They all emphasized the power of other individuals, other organizations and other sectors, and the relative powerlessness of their own individual, organization or sector. At the same time however, they did seem to think that power mattered as they emphasized that ‘vested interests’ and ‘power relations’ were one of the most important reasons ‘why things are and remain the way they are’. Summarizing, I observed that most individuals seem to combine the following three perceptions:

1. *I / we do not have power*
2. *They have (more) power*
3. *Power determines the way things go*

When a majority of individuals thinks this way, a vicious circle emerges, in which feelings of powerlessness and suspicion mutually enforce one another, causing a particularly rigid system. No one moves, every one waits. I argue that perhaps the main problem in the transport sector lies not in ‘vested interests’ or ‘the powers that be’, perhaps the problem lies rather in the opposite, i.e. (the illusion of) *powerlessness*. This powerlessness is what causes the so-called lock-in that hampers the ‘take-off’ in sustainability transitions. Platforms, programs, and projects (like the ones studied), which position themselves as ‘neutral facilitators’, do not challenge this lock-in, they may even aggravate it. For the irony of ‘powerlessness’ and ‘passivity’ is that it enables the indirect exercise of reinforcing power; the reproduction and enforcement of existing institutions and structures. By avoiding the overt exercise of power to change things, one is, willingly or unwillingly, supporting those ‘powers that be’ for which it is convenient that things remain as they are.

During my fieldwork I encountered various practitioners that claimed that ‘they were not interested in power’. The concept of power carries negative and controversial connotations for many people, even more so with the Dutch word ‘macht’. However, I

also met practitioners that asked me how power can be exercised without involving corruption or manipulation. This combination of statements and questions, gave me an overall impression that many practitioners are hesitant about consciously exercising power to realize their goals and ideals, not just because they are unwilling to pay the costs of exercising power (i.e. time, energy, risk, responsibility, etc.), but mostly because they do not know *how* to exercise power in an ‘ethical way’, without making matters worse or without engaging in manipulative practices. The ethics of power relates to philosophical debates that have been going on for ages, involving idea such as freedom and ‘the good’. Although I am not an ethics specialist, I felt compelled as a power researcher to explore some of the ethical issues involved in the exercise of power.

7.4.1. Ethics and power

There are three major strands in the philosophy of ethics: 1) consequentialist ethics, 2) deontological ethics, and 3) virtue ethics (García-Rosell and Moisander 2008). In consequentialist ethics, the justification of an act is derived from its consequences (regardless of the nature of the act itself or the intentions of the actor). Utilitarianism is a type of consequentialist ethics, in which an act is judged according to the extent to which the consequences of that act lead to a higher happiness (‘utility’) for a large(r) number of individuals. In contrast, in deontological ethics, the justification of an act lies not in the consequences but in the intrinsic nature of the act itself, thus making it possible to derive some universal ethical principles (e.g. Kant’s categorical imperative). In virtue ethics, justification lies not in the act nor in its consequences, but rather in the character and intentions of the individual who acts. Now the question is; how do these perspectives on ethics relate to the exercise of power? And how does this relate to the definition of power as the capacity of actors to mobilize resources to achieve a certain goal?

In virtue ethics, the worth of power lies in the *person* that exercises it, and the extent to which this person is a virtuous individual with virtuous intentions. From a consequentialist perspective, the moral worth of power lies not so much in the person or his intentions, but rather in the actual goals and outcomes, i.e. the ‘ends’ of the power exercise. If power is a means to an end, and if ends justify the means, the exercise of power is justified by its ends³⁴⁰. In contrast, a deontological perspective dictates that the worth of power lies in the act of power itself. The exercise of power can only be justified if the act itself meets certain basic principles. This can be related to Kant’s ethics, which revolves around the principle that one should *always* treat individuals as ends in themselves, and never *only* as means (Reath 1989, O’Neill 1989). When we relate this to the definition of power as the capacity of actors to mobilize resources to realize a certain goal, deontological ethics imply that in an ‘ethical’ power exercise individuals should never be treated *only* as resources, but always as actors *as well*. When A mobilizes B as a mere *resource* without taking into account the goals that B has as *an actor*, A is not treating B as an end in itself.

³⁴⁰ This can be related to a Machiavellian perspective on power. Although Machiavelli never actually stated it in his book *The Prince* (1532), the author is often quoted on the statement that ‘the ends justify the means’, and for the idea that the moral worth of power lies in the ends for which power is exercised

B has become merely a means to an end, a 'pawn' to reach a specific goal that A has decided without B's consent or knowledge thereof. When A exercises power 'over' B to such extent that B becomes a resource and ceases to be an actor, this can (deontologically) qualify as an 'unethical' exercise of power. In summary, we can distinguish the following three ethical perspectives on power:

- Power is justified through its *ends* (consequentialist ethics)
- Power is justified through the *person* exercising it (virtue ethics)
- Power is justified through the *way* in which it is exercised (deontological ethics)

Now the question is how these different ethical perspectives relate to one another. To what extent are they contradictory, complementary, sufficient, or necessary? There are inherent tensions between different ethical perspectives, and we see that Machiavelli and Kant are often treated as contrasting in terms of ethics (e.g. Bruclesby & Cummings 1996). However, I argue that it is possible to postulate three distinct ethical principles on power, which all include and combine the three different ethical perspectives:

1. The exercise of power should serve desirable goals
2. Power should never be a goal in itself
3. People should always be treated as ends and never only as means

These principles combine consequentialist, virtue, *and* deontological ethics. Using power for a desirable goal can be related to its actual outcomes (consequentialist ethics), but it can also be related to the character and *intentions* of the person exercising it (virtue ethics), and it can also be related to respecting the desires and goals of (all) individuals involved (deontological ethics). The second principle – power should never be a goal in itself – can also be argued in a consequentialist line of argument. If power is a means to an end, it follows that if the aim of exercising power is gaining (more) power, the means has become an end in itself. As such there is no separable 'end' to justify the 'means', and one can argue on that basis that by definition there is no consequentialist justification when power is exercised merely for the purpose of gaining (more) power. As for virtue ethics, the pursuit of power as a goal in itself can be seen as a manifestation of 'bad character'; a power hungry person is typically not seen as a virtuous person. While the third principle – people should always be treated as ends and never only as means – is primarily deontological, it can also be argued in consequentialist and virtue-based terms. For one can define a virtuous character in terms of the intention to treat other as ends, and one can also argue that treating individuals merely as ends may have undesirable consequences, and may thus also be unjustified from a consequentialist perspective.

In many cases, it is possible to follow *all three* principles. As such, when people ask how to exercise power in an 'ethical' way, I would argue that they should in first instance strive to combine all three principles. However, obviously, there can be tensions and dilemmas between these three principles. In that case the question is which of the three principles is 'leading'. Then I would argue that the person should be *aware* of which of the three

principles he or she chooses as ‘leading’³⁴¹. The purpose of a scientific ethical analysis is not necessarily to make a normative judgment about which principle should be leading, but rather about mapping out the possibilities of either combining or choosing between different ethical principles.

7.4.2. Ethics perspective on market mechanisms and pricing policies

In the programs and projects under study, much of the discussions were implicitly couched in a consequentialist line of thought, especially when it concerned the alleged benefits of ‘market mechanisms’. It was often implied that whether or not one ‘believes’ in capitalism and the ‘free market’, it does provide the fastest, most effective, or even *only* way to achieve sustainability on a wide scale. Implementing pricing policies, showing companies that they can make (more) profit through sustainable practices, demonstrating win-win strategies that maximize profits and benefits for the majority of people, these type of approaches were believed to be the most effective way of implementing sustainability on a wide scale. This is an inherently consequentialist and utilitarian line of thought. I argue that more generally, prevailing quantitative and economic discourses on sustainability tend to be primarily based on an (implicit) consequentialist and utilitarian approach to ethics. Such utilitarian perspectives on sustainability have been criticized for “de-politiciz[ing] sustainable development by downplaying the importance of the social and political dimensions of environmental problems”, for “representing sustainable development primarily as an economic problem (...) [and] merely as a question of utility, satisfaction and individual responsibility” (García-Rosell & Moisaner 2008:212). Moreover, utilitarianism can be criticized for having a reductionist approach to ethics. This reductionism and simplification is also what makes utilitarianism so pragmatic, popular and attractive, for comparing the ‘costs’ and ‘benefits’ of an act seems a common sense basis to take decisions on. However, critics of utilitarianism argue that it is philosophically impossible to compare different ‘utilities’, let alone in quantitative terms³⁴².

When looking at ‘market mechanisms’ and ‘pricing policies’ as means for government to induce desirable mobility behavior, these are justified from a utilitarian, consequentialist perspective, if the pricing policy leads to environmental benefits for a majority of individuals. From a deontological perspective, however, the only relevant question is whether the act of government ‘pricing people for their mobility behavior’ is in itself ‘just’.

³⁴¹ For instance, when a person believes that reaching desirable ends requires him or her to abuse some individuals merely as means (e.g. lie, cheat, manipulate), or decides to ‘sacrifice’ some individuals against their will for the sake of ‘saving’ other individuals, this person is essentially taking the first principle as more important than the third principle, and choosing for consequentialist ethics *over* deontological ethics.

³⁴² For instance, most people would agree that killing car-drivers to solve the environmental problem would be utterly unethical. Critics of utilitarianism argue that the immoral dimension in this example is not that the environmental problem is not ‘worth’ killing people for, the point is that killing people is in itself immoral. It is simply impossible to compare and ‘weigh off’ the utility of one (solving environmental problems) to the other (the killing of people), also in cases where this is less obvious.

As discussed in the case-studies and in the first intermezzo, this was a point of debate. In several meetings I observed practitioners arguing that ‘we should get rid of this idea that mobility is a basic right’, which implies that many people still believe that it is. This idea that ‘mobility is a basic right’, i.e. that every individual should be able to get from A to B, can be seen as a deontological principle. The question is to what extent we want to sacrifice this deontological principle for the sake of environmental benefits.

However, the interesting thing about ‘market mechanisms’ and ‘pricing policies’ is that it serves to ignore and circumvent these deontological ethical dilemmas. This is because many practitioners seem to believe that market mechanisms and pricing policies fulfill the basic deontological principle of ‘freedom of choice’. Nobody is ‘forcing’ anybody; you pay ‘voluntarily’ to get something. Not only are pricing policies supposedly a fast, effective, and efficient way to decrease environmental impact (consequentialist justification), they also seem to safeguard voluntary behavior and individual freedom of choice (deontological justification). Moreover, market mechanisms and pricing policies also provide a safe and effective way to exercise power, in a subtle and indirect way. It is not necessary to forbid people to drive their cars, nor is it necessary to haunt down dissidents, and as such it is also not necessary to have endless discussions about whether or not it is justified that the government exercises that kind of power over its citizens. Instead, market mechanisms and pricing policies ‘do the work’ under a veil of an ‘objective’ economic logic. Hence market mechanisms and pricing policies provide a magic formula, the ‘holy grail’ of environmental policy.

I argue that this ‘holy grail’ of market mechanisms and pricing policies is based on an illusion. For it is an illusion to think that pricing mechanisms fulfill the deontological principle of freedom of choice; obviously, people with little or no money, do not have ‘the choice’. In debates over pricing policies some try to circumvent this point by arguing that the increase in prices will be so little that everybody will still be able to pay for car driving. However, in that case, the consequentialist argument that pricing policies will significantly decrease car-use, no longer holds. In other words, it is an illusion – and a philosophical fallacy – to think that pricing mechanisms can fulfill *both* consequentialist and deontological ethics. The effectiveness of the pricing policy (i.e. its consequentialist justification) is inherently dependent on the extent to which it can *constrain* the freedom of a significant amount of actors (thus deviating from the deontological principle).

7.4.3. The ethics of power in sustainability transitions

Interestingly, there is something inherently consequentialist and utilitarian about the concept of sustainability transitions. When imagining a ‘sustainable societal system’ we are typically thinking about maximizing the well-being and happiness (‘utility’) of ‘the majority’, more than considering the well-being or ‘freedom’ of each single individual. When thinking about long-term developments that take several generations, we tend to focus on the consequences of our actions rather than on the intrinsic nature of these actions themselves. As such, thinking about sustainability transitions is inherently susceptible to a consequentialist and utilitarian logic. Earlier I argued that the prevailing quantitative and economic discourses on sustainability tend to be based on an (implicit)

consequentialist and utilitarian approach to ethics. Mean while, however, much of the notions on democracy, equality, and justice in the western world are still (implicitly) grounded in deontological principles. It is widely believed that it would be ‘unjust’ to sacrifice the lives of people in the pursuit of a societal goal such as sustainability³⁴³. I hypothesize that this tension between consequentialist and deontological perspectives on ethics, underlies much of the disagreements and political controversies over sustainability policies. Particularly when it comes to the issue of how to deal with future uncertainty. In a consequentialist line of thought, it can be justified to do something if quantitative, statistical analyzes point out that this is *likely* to have the best results in the future. In deontological ethics however, this uncertainty about the outcome of our actions, dictates that we should stick to making sure that our actions are in themselves intrinsically good (e.g. honest, just, voluntary etc.), and never choose to do something that could be ‘bad’ at the moment (i.e. dishonest, unjust, involuntary) in the name of the ‘good’ things that it might cause in the future, no matter how ‘probable’. While practitioners in the projects and programs under study did not discuss these ethical considerations explicitly, they did implicitly struggle with these ethical dilemmas. Uncertainty about environmental impacts was often referred to as a problem that constrained decision-making.

This tension between consequentialist and deontological perspectives on ethics has significant consequences for the way in which people engage with, and react to, the idea of sustainability transitions. In the case-studies I observed that several people were skeptical about the idea of sustainability transitions, long-term visions and radical transformation. We could explain this skepticism purely in terms of conservatism, risk-aversion, or vested interests. I however argue that there is more. The skepticism about sustainability transitions also has to do with a genuine worry about constraining individual freedom. Especially the association of sustainability with ‘the environment’ and ‘radical measures’, raises worries about a government sacrificing human well-being and individual freedom in the name of saving the environment. In order to address these worries, transition discourse needs to specify its ‘ethical stance’ on how it justifies the exercise of power in the name of sustainability transitions. If transitions are justified by their end – sustainability – it logically follows that the exercise of power to enable transitions, is only justified when it *actually contributes to sustainability*. A transition is not a goal in itself; sustainability is the goal, transitions are merely a process towards this goal. This relates to the concept of sustainable power relations, as will be discussed in section 7.6. Therein it will be argued that sustainable power relations (to be defined later) are an inherent part of the notion of ‘sustainability’. This can be explained in a consequentialist line of thought – the exercise of power is justified when it leads to (more) sustainable power relations –

³⁴³ Ethical perspectives get much more complex and contested when related to the environment. In environmental ethics the anthropocentricity of ethical principles is questioned, and contrasted with *nonanthropocentric*, *biocentric* and *ecocentric* approaches (García-Rosell & Moisaner 2008: 213). This questions the ethical perspectives as discussed earlier. For instance, if in deontological ethics, individuals should always be treated as ends in themselves and never only as means, how does this apply to animals, and organic life in general? To what extent is it justified that animals and organic life are used as mere resources by and for the human race? And if that is the case, why not the other way around, i.e. sacrificing the well being of human beings in order to spare other species?

but it can also be explained in deontological terms – the exercise of power should, in itself, always be sustainable, i.e. based on sustainable power relations (i.e. based on intrinsic motivation and legitimacy – see section 7.6.). In summary, when synthesizing the discussion so far, the following ethical principles can be postulated regarding the exercise of power in the context of sustainability transitions:

1. The exercise of power to enable transitions should serve sustainability
2. Both transitions and power should not be goals in themselves
3. We should strive for sustainable power relations, both now and in the future

These principles can be applied to all the power typologies presented in chapter 3. In the context of sustainability transitions, all types of power exercise and all types of power relations can be justified in so far as they fulfill these principles above. Obviously the evaluation whether or not empirical acts of power fulfill these principles, is a subjective matter which requires interpretative discussion (depending on what one defines as ‘sustainable’ in a given context). The point is to *have* this discussion, and to provide basic concepts and principles to organize and structure such a discussion. The principles above are a first attempt to do so in the context of transition studies.

7.5. THE POWER OF TRANSITION DISCOURSE

Transition discourse has been extensively discussed in the empirical part of this dissertation, both within the case-studies and in the first intermezzo on *Transition Discourse and Sustainable Mobility*. In response to Smith and Kern’s statement that transition discourse “fails to induce institutional change with sufficient reach and depth” as existing institutions and interests are downgrading the discourse (Smith & Kern 2008:14), I proposed to approach transition discourse in a less pessimistic manner, by treating it as a form of boundary work between policy-makers, researchers, business-representatives, NGO-representatives, and several mediators. The concept of sustainability transitions, and ‘transition management’, is used to demarcate, to cross, and to blur boundaries between these sectors, thereby empowering individuals to be constructive and cooperative participants while simultaneously maintaining a critical distance. Transition discourse serves as a flexible common language amongst regime-actors and niche-actors, enabling them to communicate and cooperate in the name of a common cause, while also inviting (and justifying) fierce disagreement and opposition. Interpreting transition discourse as such a specific form of boundary-work offers an alternative to more cynical interpretations of the contradictions of transition language (e.g. ‘window-dressing’ or ‘subsidy-hunting’).

7.5.1. *The (dis)empowering potential of transition discourse*

To a certain extent, Smith and Kern’s discussion of transition discourse revolves around how much power it has in terms of it being *institutionalized*. I argue that whether or not transition discourse itself is institutionalized, is not the measure of how much impact it has. This relates to the distinction between transformative and reinforcing power. Even if transition discourse does not serve the exercise of *reinforcing* power (i.e. the capacity to

enforce institutions and structures), it can still serve the exercise of *innovative* and *transformative* power (i.e. developing new ideas and new institutions). As emphasized by Hajer, “discursive interaction (i.e. language in use) can create new meanings and new identities, i.e. it may alter cognitive patterns and create new cognitions and new positionings. Hence discourse fulfils a key role in processes of political change” (1995: 59). In order to fulfill this role of inducing change, it is not necessary for a particular language to be formalized and institutionalized. On the contrary, the fact that it is *not* formalized nor institutionalized, may give it the necessary *agility* to challenge existing institutionalized discourse. Transition discourse is *by definition* transitional, and it is exactly in this transitory nature that its innovative and transformative power lies.

Having said that, while transition discourse may be empowering in theory, in the case-studies it was observed that transition discourse did not always empower, and that in some cases it even seemed to *disempower* participants. I argue that this mostly had to do with the attempts to *institutionalize and formalize* transition discourse. In the case-studies it was observed that the disempowering effects of transition discourse mostly came forth from its top-down imposition, in which project-leaders were *formally required* to formulate the ambitions and contributions of their projects in transition terms, whether or not they identified with the transition terminology. If the purpose of transition discourse is, by its very nature, to question and challenge existing structures and institutions, it is rather ironic and paradoxical to formally ‘impose’ and ‘institutionalize’ this discourse.

Moreover, the case-studies and intermezzos demonstrated that transition discourse (on sustainable mobility) was primarily used in a governmental and technocratic context, mostly by public officials, researchers, and ‘advisors’. While, in theory, transition discourse (also) revolves around bottom-up innovation and radical social change, in practice there seemed to be little to no involvement of social movements or grassroots initiatives, nor were citizens or critical masses directly involved in the observed projects and programs. I argue that the empowering potential of transition discourse highly depends on the involvement of social movements, grassroots initiatives, and citizens. There are several indicators that transition discourse has been ‘taken up’ by civil society in recent years, as observed in the international *Transition Towns* movement³⁴⁴ and Dutch *Urgenda* activities³⁴⁵.

Moving beyond transition discourse; how does power relate to discourse more generally? Discourse is much broader than the mere mobilization of ‘mental resources’ (i.e. ideas, beliefs, concepts, information, etc.). For discourse also significantly determines the way in which we conceptualize and distribute all the other type of resources (human, natural, artefactual, and monetary), and to a great extent it shapes our institutions and structures. Moreover, discourse directly relates to the conditions of power, especially in terms of having the necessary *strategies, skills, and willingness* to exercise power. All this implies a critique of my own conceptual power framework as presented in chapter 3, because

³⁴⁴ I will shortly discuss the *Transition Towns* movement in the conclusion

³⁴⁵ See discussion of the *Urgenda* in the Intermezzo on *Transition Discourse and Sustainable Mobility*

therein discourse remains implicit and under-conceptualized. Although I did use discourse analysis as a method to apply the conceptual power framework, a more explicit treatment of discourse – as presented in the intermezzo on *Transition Discourse and Sustainable Mobility* – is not yet part of this conceptual power framework. As such, in the analytical power-in-transition framework, as will be presented in section 7.7., I propose to give more explicit attention to the exercise of *discursive* power and how this affects power relations and power dynamics (antagonistic versus synergetic). This especially relates to the earlier discussion on ‘systemic power’ and the ‘landscape level’. In order to unravel and distinguish which ‘dominant trends’ and ‘undercurrent counter-movements’ are relevant for particular cases under study, it is necessary to consider prevailing discourse and paradigms in the broader context of these cases, as well as public voices that question these prevailing paradigms and provide alternative discourses.

7.5.2. Beyond discourse: power as physical materialization

Having said that, I still emphasize the importance of (also) studying power as the mobilization of physical resources, i.e. going ‘beyond discourse’. This is also where the conceptual power framework as presented in chapter 3 is still necessary to complement power analyses that only focus on discourse. This also relates to the earlier discussion on *passive* versus *active* exercise of power (section 7.3). While engaging in discourse can be very ‘pro-active’, it does not necessarily involve the active mobilization of physical resources. As demonstrated in the discussion on transition discourse, the distinction between transformative and reinforcing power is blurry, especially when there is a synergetic relation between one and the other. On the one hand, transition discourse is used to question, challenge, and resist the reinforcing power of the regime. On the other hand, transition discourse is also used by this very regime, and/or used to engage with, and appeal to, this regime. In a way, transition discourse can be seen as a language that actors use to change the regime by robbing against it, or even becoming part of it. A Trojan Horse strategy, so to speak, changing the regime ‘from within’.

However, when and how to decide whether or not this Trojan Horse has ‘succeeded’? How do we evaluate whether the use of transition discourse ultimately enabled transformative power or reinforcing power? If transformative and reinforcing power enable one another, which type of power is ultimately ‘most’ enabled? I argue that this question can only be answered at the moment of *physical materialization, possession, and profit*: who has materialized the new institutional arrangements, who possesses the new resources, who profits from them and who’s goals have been realized? Answering these questions is obviously still a matter of interpretation and discussion, and the distinction between ‘transformative’ and ‘reinforcing’ will always remain contestable to a certain extent. However, the point being made here is that the moment of *physical materialization* is the appropriate point of discussion. Whether a synergetic power dynamics ultimately manifests itself in transformative or reinforcing power, and what kind of power relations result from that, depends on the *materialization* of power exercise, i.e. the actual mobilization of physical resources.

This does not mean that an analyst has to ‘wait’ for this moment to empirically occur. Rather, a power analyst can discuss whether and how a particular discourse seems to *lead up to* physical materialization, and what kind of power relations would be implied by expected forms of possession and profit (i.e. how physical resources are distributed). This is what I aimed to do when discussing the ‘transition potential’ of the projects and programs under study. The purpose thereof was not to predict future event or speculate on the outcomes of the project and programs, but rather to critically scrutinize the future power relations and physical consequences that were inherently implied in the discourses used in the respective meetings, discussions, plans, proposals, and future visions on sustainable mobility. As we saw in these sections on transition potential, I raised concerns about who would be empowered and what kind of power relations would be enabled if the plans, proposals, and future visions were to be realized. The next section discusses these concerns further.

7.6. POWER AS A SUBSTANTIVE ISSUE: SUSTAINABLE POWER RELATIONS

In transition studies, the concept of ‘regime replacement’ implies that for a sustainability transition to occur, the current regime needs to be either replaced by or adapted to a new regime that takes sustainability in to account. When looking at the case-studies, one can argue that their visions and proposals regarding sustainable mobility contained ‘regime-replacement’ in the sense that the new, envisioned regimes incorporate sustainability concerns (more than current regimes do). However, such ‘regime replacement’ does not say anything about whether or not power relations themselves change. Which actors are in this new regime? How powerful is this new regime? All three case-studies envisioned a strong(er) role for government and business. As such, the new regime would consist of 1) the same type of actors (government and business), and 2) have an equal amount of power, or even more power, compared to the current regime. To what extent can this be described as transition to sustainability?

So far, the role of power in transition has been discussed mostly in terms of a *process* issue: how is power exercised *in order to* achieve sustainability. However, one can also consider power relations as *part* of sustainability, as a *substantial* issue, and ask: *which power relations are sustainable?* Are the current power relations sustainable? Would a situation in which government and business have more power lead to sustainable power relations? The suggestion in the three case-studies is that this would lead to more sustainable *transport*, in the sense that government and business would use their power to reduce the negative impact of transport behavior on the planet. But to what extent would the power relations *themselves* be sustainable, and to what extent would the exercise of power be sustainable? And are such ‘sustainable power relations’ not an inherent part of the social dimension of sustainability? In order to answer these questions, it is necessary to specify what is meant by ‘sustainable power relations’.

7.6.1. Intrinsic versus extrinsic motivation

The projects and programs studied in this dissertation placed a strong emphasis on both ‘punishing’ and/or ‘rewarding’ actors towards more sustainable transport behavior, and

the overall idea that ‘everything has a price’ and ‘people should pay for the consequences of their behavior’. Proposals and future visions on sustainability mobility often included a government that would use environmental policies based on market principles, pricing-policies and ‘green fiscal awards’ for inducing desirable behavior. As discussed in the intermezzo on *Transition Discourse and Sustainable Mobility*, this orientation did not only apply to the cases under study, but resonated with a broader emerging discourse on neo-liberal approaches to sustainability, including privatization and/or market-based based policies.

The image of a new mobility system, in which surveillance apparatuses, traffic flows, and financial flows are integrated in a system that ‘knows’ when, where and how we travel and ‘prices’ us accordingly, reminds us of Foucault’s description of the Panopticon, a material and ideological structure that mechanizes and disindividualizes the exercise of control ([1977]2002:196). As already indicated in the empirical chapters on *Transumo* and the *A15-project*, I argue that there are a few serious power issues in this future ‘panoptical’ vision on ‘sustainable mobility’. First, citizens would become (more) dependent on those providing ‘mobility services’, i.e. government and business actors and their respective ‘mobility managers’. Moreover, the envisioned future mobility system would require a far-reaching integration of transport surveillance systems, traffic flows, and financial flows, which in turn would require highly interconnected and sophisticated ICT-technologies throughout the transport sector. This means that in order to profit from the provided ‘mobility services’, citizens would have to cooperate with this integrated system; purchase the necessary technological products (e.g. car surveillance systems) and provide the necessary information on when and where they travel. Besides the moral objections that citizens could have against this (e.g. due to privacy issues), all this also requires astonishing amounts of financial investment. Considering the ‘billion-investments’ that are also envisioned to be spent on other intermodal infrastructures (e.g. rail infrastructure), one wonders where all this money is supposed to come from. Furthermore, there would also be an issue of social exclusion of all those citizens that would, for some reason or another, not be integrated in this system, e.g. homeless, refugees, convicts, tourists etc. Although the envisioned mobility system is presented as a ‘self-steering’ and ‘flexible’ system that safeguards social inclusion and individual ‘freedom of choice’, one can question to what extent the envisioned mobility system would actually enable the free movement of all people through time and space.

While some might get the shivers from such a ‘Green Panoptic’ and the neo-liberal idea that ‘we pay for every service we use’, many others believe that such a system - a ‘free’ market regulated by environmental restrictions - actually provides the best and fairest possible balance between ‘environmental government regulation’ and economic growth on the one hand, and individual ‘freedom of choice’ on the other hand. Now the question is; how do we - as ‘power researchers’ - explain and demonstrate that some of these envisioned systems of environmental regulations come with problematic power structures? I argue that critique of neo-liberal discourse, or the images of Foucault’s Panopticon, are ‘not enough’. Nor is the argument that the envisioned system may create new structures of control, dependence relations, or social exclusion. For these instances are seen as ‘necessary’ and ‘unavoidable’ aspects of environmental regulation. This is

where the distinction between intrinsic and extrinsic motivation is useful. I argue that the very concept of ‘punishing’ and/ or ‘rewarding’ people towards desirable transport behavior is based on a psychology of extrinsic motivation; transport behavior would literally depend upon the ‘supervision and rewards mediated by others’ (i.e. the essence of extrinsic motivation). The problem with extrinsic motivation is two-fold; not only does it make people *dependent* on supervision and rewards, these supervision and rewards *wear off with use* as individuals either get used to it or find ways to manipulate it. This means that when we extrinsically motivate others to do something, and want to keep doing so, we have to constantly *increase* the level of supervision and awards. On that basis, one can argue that extrinsic motivation is an inherently *unsustainable* situation, as higher levels of supervision and awards require an increasing use of resources, including time, money, and technology. As such it can be argued that a situation in which business-actors and citizens need to be continuously ‘awarded’ and ‘supervised’ by government in order to choose for sustainable behavior, is, in it self, not sustainable. We can use intrinsic motivation to conceptualize a sustainable power relation as a relation in which the choices and efforts of actors do not depend on supervision or rewards by others, but rather come forth from positively valued experiences that individuals derive directly from their activities, resulting from cognitions about their activities that produce motivation, meaning and satisfaction (Thomas & Velthouse 1990, see chapter 3, section 3.3.).

The possible strength of defining sustainable power relations in terms of intrinsic motivation (as opposed to extrinsic motivation) is that it does not only have a normative dimension (e.g. avoiding dependence or inequality), but that it can also be used as an *instrumental* and *economic* argument. Environmental regulations based on extrinsic motivation are not only unsustainable in terms of creating new dependence relations and centralized structures of domination, they may also simply be ineffective and inefficient on the long-term, because higher levels of supervision and awards require an increasing use of resources, including time, money, employment, and technology. The centralization of power is not just a problem for those who are ‘dominated’ but it also creates ‘costs’ for those who dominate. If one’s goal is to dominate, these costs might be worth it. However, if one’s goal is to achieve a societal goal (e.g. ecological sustainability), *decentralized* power structures are not only ‘friendlier’ but may also be more effective and efficient. This leads us to the next subsection on ‘ecological thresholds’ and ‘social thresholds’.

7.6.2. Ecological and social thresholds

In September 2009 two articles in *Nature* and *Science* addressed the issue of ecological thresholds and the related need for international institutions. In “A Safe Operating Space for Humanity”, Rockström and colleagues (2009:472) argue that “many subsystems of Earth react in a nonlinear, often abrupt, way, and are particularly sensitive around threshold levels of certain key variables”, and that “if these thresholds are crossed, then important subsystems, such as the monsoon system, could shift into a new state, often with deleterious or potentially even disastrous consequence for humans”. The authors propose ‘boundaries’ that “represent a new approach to defining biophysical preconditions for human development”, and state that “for the first time, we are trying to quantify the safe limits outside of which the Earth system cannot continue to function in a

stable, Holocene-like state” (ibid:474). In the article “Looming Global-Scale Failures and Missing Institutions”, Walker and colleagues (2009:1346) address these ecological thresholds and other global problems, and argue for the development of new international institutions to “help construct and maintain a global-scale social contract”:

The challenge is to design international institutions that overcome free-riding by creating incentives to reward cooperation and to sanction violations. For example, although problems remain with the multilateral trade system, the World Trade Organization (WTO) has reduced tariffs and nontariff barriers to the benefit of its members. Countries that violate the rules are subject to proportionate retaliation (10).

(...) International climate agreements must be designed to align national and global interests and curb free-riding. Borrowing from the WTO architecture, the linkage between trade and the environment could be incorporated within a new climate treaty to enforce emission limits for trade-sensitive sectors. New global standards could establish a climate-friendly framework with supporting payments (Walker et al. 2009: 1346).

Although the article acknowledges the need for ‘transparent and common norms’, and states that the legitimacy of institutional enforcement will depend on ‘acceptance’ by ‘numerous’ and ‘diverse’ actors, it does not question whether the majority of the global community would ‘accept’ an environmental international institution that ‘borrows’ from the WTO-architecture, an institution that according to several critical voices in civil society helped to *aggravate* global problems and inequalities, rather than solving them.

These two articles in *Nature* and *Science* can be seen as a manifestation of the growing attention for ecological concerns, not only in science, but also in politics and business. Scientific articles as the one cited above, are used to call for institutional control as a response to ‘looming ecological crises’. Although this attention can be seen as desirable trend, the problem is that it can be (mis)used to push through certain measures that lead to new problems, often including inequalities, new structures of domination, and democratic deficits³⁴⁶. In my fieldwork, in which I observed numerous discussions on sustainable development, I was astounded to hear quite some people explicitly state that ‘democracy is the problem’, and that the only way to achieve sustainability is either through an ‘enlightened benevolent dictator’ or through a ‘big crisis’. Some people I met even argued in favor of eco-fascism, contending that the ecological crisis is simply ‘too urgent’ to wait for wide social support. Although these remarks can be put aside as ill-contemplated comments, they still seem alarming when noticing their resemblance to discourses in the past that marked the beginnings of dictatorial regimes.

However, instead of using such worries as a basis to invalidate the sustainability discourse all together, I argue that we as power researchers - and other social scientists - can enrich and nuance the ever growing sustainability discourse, by adding new dimensions to it. Perhaps it is time to introduce the idea that in analogy to ‘ecological thresholds’, there might also be such a thing as ‘societal thresholds’. In this context, Parsons’ (1963) concept of power can be useful. As explained in chapter 3, the basic definition of power as ‘the

³⁴⁶ Worries as also raised by Frank Fischer (2011)

capacity of actors to mobilize resources to reach a specific goal' is partly based on Parsons' concept of power. However, Parsons' interpretation of power has more to offer than just this definition. In fact, Parsons offers a key insight for the conceptualization of 'sustainable power relations'. Parsons defined power as the capacity of a societal system to achieve collective goals, and compared power to money, claiming that its meaning can only survive as long as society supports it, and that power diminishes when it is used illegitimately (similarly to processes of inflation):

Power, as a symbolic medium, is like money in that it is itself 'worthless', but is accepted in the expectation that it can later be 'cashed in', this time in the activation of binding obligations. If, however, 'power-credit' has been extended too far, without the necessary organizational basis for fulfillment of expectations having been laid, then attempting to invoke the obligations will result in less than a full level of performance, inhibited by various sorts of resistance ([1963]2002:106).

Parsons' concept of power helps to explain, in economic and systemic terms, that even though power is not 'zero-sum', there is definitely a limit to its use. International, WTO-like institutions enforcing environmental regulations (as proposed by Walker et al. 2009), would not be effective if they are not morally supported by *a majority* of the global community, and such an enforced global order might even have counterproductive effects in terms of *decreasing* the effectiveness of power exercise. Just like in the process of inflation money loses its value, power also loses value when it is 'overused'. Much of the debates over sustainability revolve around 'environmental limits' and 'ecological thresholds'. Parson's treatment of power can be useful to there is also such a thing as 'social thresholds'. In the same way that we need to be careful in the use of natural resources by respecting nature's pace and the time it needs to regenerate itself, the use of power also has a 'delicate balance', in which a great deal of time is necessary to create its basis of trust and legitimacy.

The problem with Parsons' concept of power lies in its functionalist approach. As formulated by Haugaard: "the theory is couched in a theoretical framework – structural functionalism – which, in its stronger forms at least, has fallen entirely out of favor" (2002: 69). Although I entirely agree with the critique on functionalism (see section 7.2.), I still argue that Parsons' perspective on power is useful when we are dialoguing with scientists and policy-makers that think in these functionalist and systemic terms. Much of the environmental debates on climate change and other ecological thresholds are based on an inherently functionalist worldview. It is important that power theorists and other social scientists scrutinize this functionalist worldview, and question the tendency to translate scientific findings on the functioning of societal and ecological systems into technocratic policy suggestions. However, *while* doing that, we can also argue that *even within this functionalist* worldview, there are limits to power and institutionalization.

The attention for environmental degradation is surrounded by a discourse of 'urgency', which currently especially manifests itself in the climate change debate. This urgency seems to justify increasing calls for environmental regulation and international institutionalization. Considering this perceived sense of urgency, there is no 'time' nor

'space' to explain to environmental scientists and policy-makers what Foucault or other sophisticated social theorists have to say about the complexities of power. Rather we must (also) 'translate' our worries in functionalist and economic terms, and warn scientists and policy-makers that the breaching of 'social thresholds' through top-down regulation and overly centralized institutions might be just as disastrous as the surpassing of 'ecological thresholds' (if not more), and that sustainable power relations are a necessary condition to safeguard ecological and economic sustainability in the long-term.

7.7. AN ANALYTICAL FRAMEWORK TO STUDY POWER IN TRANSITION

So far the discussion of power in transition, and the reconsideration of the conceptual power framework, based on empirical observations and additional literature. I now synthesize this discussion by formulating theoretical hypotheses on power in transition, and subsequently presenting an analytical framework to further explore these hypotheses in empirical analysis.

7.7.1. Formulating hypotheses on power in transition

As explained in chapter 2 (section 2.5), the generation of hypotheses is not entirely 'induced' from empirical observations, nor are they merely 'deduced' from the conceptualization of power in transition. Rather, they are a combination of both, in which the purpose is not to 'predict' or 'explain', but mainly to be explicit about my empirical and theoretical insights discussed so far. In order to avoid that these insights remain vague or suggestive, I aim to clearly synthesize, formulate, and communicate them in explicit hypotheses, thereby emphasizing an intention and invitation to further scrutinize these insights in empirical study, in cooperation with other researchers.

Hypothesis 1. Sustainability transitions require the collective exercise of transformative power at the landscape level, i.e. social (counter-) movements and 'radical' groups of actors that challenge dominant trends at the landscape level.

Trends at the landscape level can be influenced, shaped, and altered by the collective exercise of power. Besides dominant trends, there are undercurrent counter-movements from which new and alternative trends (can) emerge. While regimes can in theory contribute to sustainability transitions by exercising reinforcing power to establish new structures and institutions, it is an inherent inclination of regimes to actually reproduce and reinforce dominant trends at the landscape level. As such, radical niches that cooperate with radical niche-regimes – which have an antagonistic relation with regimes and synergetic relation with undercurrent counter-movements – generally exercise more power to enable sustainability transitions, than moderate niches and moderate niche-regimes that have a synergetic relation with regimes. This power of radical niches and radical-niche regimes is increased by playing into the power of undercurrent counter-movements. The power of these undercurrent counter-movements is two-fold: 1) they provide support for radical niches and niche-regimes and, 2) they weaken regimes by

challenging dominant trends. The power of radical groups and social counter-movements is a necessary but not sufficient condition for sustainability transitions.

Hypothesis 2. Sustainability transitions require power interplay between diverse groups of actors: regimes, niche-regimes, and niches, both radical and moderate, both passive and active. Currently such power interplay is lacking in practice.

While this may sound obvious, it is my hypothesis that the majority of actors tend to operate based on the belief that it is possible to achieve sustainability transitions through a limited, one-sided focus on only one specific type of power exercise. In the project and programs under study, there was a focus on the passive exercise of power by moderate niche-regimes. It seemed that the moderate niche-regimes wanted to explicitly ‘distance’ themselves from more radical niches and niche-regimes. I hypothesize that this ‘avoidance’ or ‘fear’ is a serious impediment to sustainability transitions, and that it is a necessary condition for sustainability transitions that passive and moderate niche-regimes acknowledge and cooperate with more pro-active and radical niche-regimes. I hypothesize that the opposite also applies; radical niches and niche-regimes that challenge dominant trends and identify with counter-movements, tend to avoid association with more moderate groups, and to focus on the active exercise of power, and underestimate the need for passive power exercise (i.e. developing ideas and visions).

Hypothesis 3. Sustainability transitions are best served by a particular combination of power relations between niches, niche-regimes, and regimes; independence, cooperation, and antagonism.

In the projects and programs under study, power relations were dominated by dependence (on commissioning authorities and/or certain stakeholders), competition/ co-existence (both amongst internal participants as well as between projects and programs), and synergy (with transport regimes). I hypothesize that these power relations mutually enforce one another: competition/co-existence within and between niche-regimes and niches weakens their position towards regimes, increases their dependence on, and (need for), synergy with regimes. This a more widespread tendency in sustainability governance, focused on ‘win-win’ strategies, public-private partnerships, and economic competition. I hypothesize that sustainability transitions require niche-regimes and niches that are independent, cooperate with one another, and have a primarily antagonistic relation with regimes (see marked relations in the typology below).

Power relation type	Manifestation of power relations		
Power ‘over’	mutual dependence	one-sided dependence	independence
‘More / less’ power to	cooperation	competition	co-existence
‘Different’ power to	synergy	antagonism	neutrality

Table 14. Power relations that facilitate sustainability transitions

The need for antagonistic relations implies the need for *radical* niches and radical niche-regimes. This however does not deny the role of moderate niches and niche-regimes. On the contrary, as indicated in the previous hypothesis, radical niches and radical niche-regimes need to *cooperate* with more moderate niches, moderate niche-regimes and regimes. It is possible and necessary to cooperate on certain matters while still having a primarily independent and antagonistic relation, e.g. to cooperate in the mobilization of certain resources with a regime, but meanwhile remain independent, resist, and openly criticize the reinforcing power exercised by this regime.

Hypothesis 4. The active exercise of power (i.e. mobilization of physical resources) by radical niche-regimes and niches is a necessary condition to enter the 'acceleration' and 'take-off' phases of a sustainability transition.

Niches and niche-regimes that take a passive and 'a-political' role tend to have a synergetic relation with regimes. When niches and niche-regimes have a purely synergetic relation with regimes, there is a high probability that their innovative and transformative power is used to further enable reinforcing power, thus causing a 'lock-in'. When niches and niche-regimes do not mobilize physical resources themselves (i.e. when they only mobilize ideas and concepts), they become dependent on regimes to materialize their new ideas, as such enabling the regime to 'absorb' them. As such, niches and niche-regimes that 1) mobilize both non-physical and physical resources to materialize their ideas, while 2) having an antagonistic relation with the regime, exercise *more* power to enable a transition than niches and niche-regimes that only mobilize *non-physical* resources and only have a synergetic relation with the regime. While the passive exercise of power by passive and moderate niches and niche-regimes enables a 'pre-development stage' of a transition, the 'acceleration' and 'take-off' phases of a transition require the active exercise of power by radical niche-regimes and niches.

Hypothesis 5. Transition discourse empowers actors to take up the paradoxical task of engaging with regime discourse, while also challenging this regime discourse. This paradoxical nature makes transition discourse unsuitable for institutionalization and formalization. When institutionalized and formally imposed, transition discourse loses its empowering function.

Transition discourse is primarily used by actors that operate at the intersection between government, business, science, and civil society. The concept of sustainability transitions (and 'transition management') is used to demarcate, to cross, and to blur boundaries between these sectors, thereby empowering individuals to be constructive and cooperative participants while simultaneously maintaining a critical distance. Transition discourse serves as a flexible common language amongst regime-actors, niche-actors, as well as niche-regime actors, enabling them to communicate and cooperate in the name of a common cause, while also inviting (and justifying) fierce disagreement and opposition. Considering this highly paradoxical and fluid nature of transition discourse, it is inherently unsuitable for institutionalization and formalization. When transition discourse is

institutionalized and formally imposed, it loses its empowering effects, resulting even in disempowering effects

Hypothesis 6. (The illusion of) powerlessness and the unwillingness to exercise power is a greater impediment to sustainability transitions than the power of vested interests. This unwillingness is partly based on incapacity to deal with ethical dilemmas regarding the exercise of power in the name of sustainability transition. Dealing with these ethical dilemmas more explicitly can help to regain a sense of power.

Even those actors who are generally believed to exercise ‘the most power’ within a particular context, often feel powerless and believe that others have more power than they do. To a great extent, this powerlessness is caused by an *unwillingness* to exercise power. This unwillingness in turn is partly caused by negative associations with power, and a fear of engaging in corrupt or manipulative practices, and/or a fear of taking normative decisions. Such fear can further be explained by the lack of accessible ethical perspectives that can guide practitioners to deal with moral dilemmas. The observed skepticism amongst actors to exercise power in the name of ‘sustainability transitions’ is partly caused by implicit moral dilemmas and an implicit conflict between different ethical perspectives (e.g. consequentialist versus deontological ethics). If moral dilemmas underlying sustainability transitions are made more explicit, and if ethical guidelines are provided to deal with these dilemmas, the willingness of actors to exercise power for sustainability transitions will increase.

Hypothesis 7. Sustainable power relations are a necessary condition of sustainability transitions. The outcome of a transition can only be sustainable if the power exercised within that transition 1) has been based on, and resulted in, power relations based on intrinsic motivation and 2) staid ‘within the limits of social thresholds’.

Power relations that are based on intrinsic motivation are more sustainable (also in the literal sense of ‘endurable’) than power relations that are based on extrinsic motivation. Moreover, just like there are ecological thresholds, there are ‘social thresholds’ (which limit the exercise of power), both of which define the concept of ‘sustainability’. Too much exercise of (illegitimate) power can breach these social thresholds. As such, the outcome of a transition can only be sustainable if the power exercised within that transition has been based on, and resulted in, power relations that are based on intrinsic motivation, and that staid ‘within the limits of social thresholds’.

7.7.2. An analytical power-in-transition framework

The starting point for a power-in-transition analysis is the multi-level power-in-transition framework (Multi-PIT), as presented in section 7.2. This implies a structuring of empirical phenomena in terms of dominant landscape trends and undercurrent-counter movements, regimes, niche-regimes, and niches, both radical and moderate. Obviously, the first step is to choose an object of study. That can be a particular (sub)system (i.e. a

particular sector or geographic entity), but it also may be certain group(s) of actors (e.g. project, program, organization, initiative, network etc.), or, alternatively, a specific issue, discourse, trend or 'movement'. However, no matter which object of study is chosen first, the point is to consider this object *in relation to* 1) dominant trends as well as counter-trends, and 2) multiple groups of actors that can be positioned differently towards these trends.

The characterization of empirical objects in terms of the ideal-types presented in the Multi-PIT can be a research question in itself. One may, for instance, formulate research questions on what are the relevant dominant trends and counter trends for a particular system or actor group under study. Or one may ask how a group of actors can be characterized by researching what kind of power this group exercises, and how this group positions itself towards dominant trends and counter trends. However, while this may be one way to apply the Multi-PIT to empirical phenomena, I argue that it is more interesting to go beyond such is characterization of empirical phenomena; rather than merely 'positioning' them in the Multi-PIT at a particular moment in time, the point is to study the dynamic power interaction between different objects over longer periods of time. That is what makes it a *power-in-transition* analysis.

The most important issue for future research concerns the selection of cases. Based on the discussion in this chapter (and in order to be able to further study the hypotheses), these cases need to be much more diverse than they were in this thesis. Although I would still argue to focus on groups of actors with an explicit transformative sustainability ambition, I would look for more diverse groups. All my cases concerned projects and programs that can be described as 'moderate' and relatively 'passive' niche-regimes. In order to study sustainability transitions, it is necessary to also include more 'radical' cases, including radical niches and radical niche-regimes, but also 'hard-core' regimes with transformative ambitions. Moreover it is necessary to study how these cases relate to both dominant trends and undercurrent counter-movements at the landscape level. This is in fact a necessary requirement, as characterizing a groups of actor as 'radical' or 'moderate' depends on their relation to landscape developments (see section 7.2).

Ideally, a power in transition analysis would include at least five case-studies (i.e. at least one of each), and a background analysis of relevant landscape trends (including both dominant trends as well as 'counter'-movements), in order to be able to study how the cases exercise power, and how they interact and relate, to each other and to the landscape. The 'background analysis' of landscape developments can take various forms, ranging from discourse analysis (similar to intermezzo A) to trends analyses, or a short historical overview (possibly by referring to research already done by others on these matters), as long as it does not only describe dominant trends, but also pays attention to undercurrent (counter-)movements³⁴⁷. Moreover, I argue that rather than looking at case-studies from the perspective of one particular functional sector or region (i.e. transport, energy, agriculture, South Wing, Rotterdam, etc.), it is more interesting to look at them

³⁴⁷ See for example of such landscape analysis: Zijlstra & Avelino 2012 (see also footnote nr. 351)

from various sectoral and regional perspectives, or, even more interesting, from the perspective of various dominant trends and undercurrent (counter-)movements. For instance, one can identify dominant trends such as globalization, neo-liberalization, individualization, and privatization, and then consider undercurrent (counter-)movements, such as localism, anti-globalization, and communalism. Subsequently, one can select initiatives that either reproduce and/or challenge these dominant trends and/or undercurrents, and study the different ways in which these initiatives approach sustainability transitions, and how they exercise power to enable such transitions³⁴⁸. The Multi-PIT can be used to specify the variety of cases (see figure below):

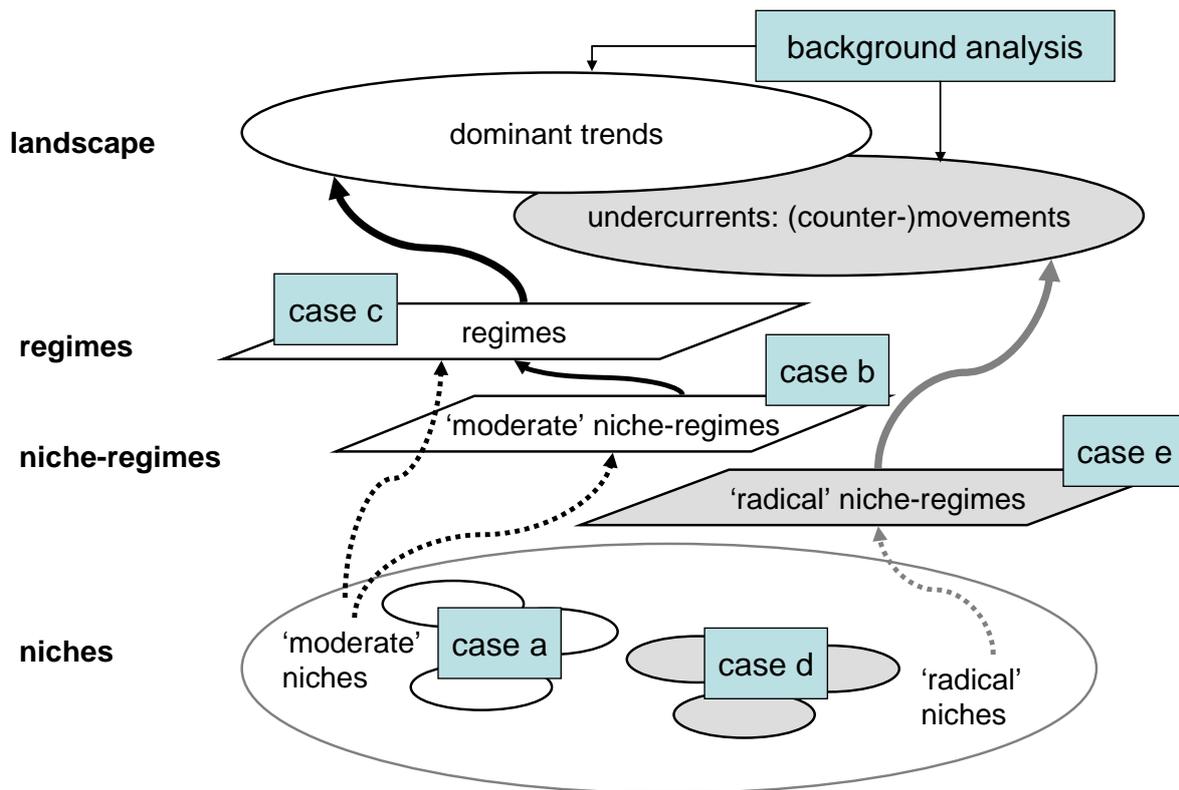


Figure 18. Using the Multi-PIT framework to select cases

³⁴⁸An example of such analysis can be found in the multi-level study that Zijlstra and I did of the automobile. Therein we analyzed dominant landscape trends enforcing the car regime (e.g., capitalism, speed, individualization) as well as undercurrent counter-movements (e.g., environmentalism, localism). Furthermore we analyzed 'radical' socio-spatial mobility as niches that 1) do not only deviate from the current socio-technical automobility regime but also from the broader 'automobile landscape', by pro-actively challenging underlying dominant paradigms and playing into undercurrent counter-movements and 2) have an explicit socio-spatial dimension that moves beyond technology-oriented solutions and tackles automobile dependence at its 'socio-spatial roots'. Subsequently we used our empirical analyzes to argue that a transition to sustainable mobility can never only come from innovation *within* the transport sector but must include radical socio-spatial innovation (Zijlstra & Avelino, forthcoming). However, this analysis did not include an explicit power analysis, which would be the added value of the framework presented here.

A last point regarding the selection of case-studies, is that it is not necessary to select initiatives that use transition discourse themselves, call themselves ‘transition projects’ or ‘transition programs’, or want to apply transition management. For it is perfectly possible that initiatives that have never even heard of transition (management), have more transition potential than initiatives that do speak in transition terms. The power-in-transition framework should be able to study the transition potential of any type of initiative that has a transformative ambition and aims to contribute to sustainability, regardless of whether or not it is officially called a ‘transition’ project or program.

Once the cases have been selected, the power-in-transition analysis can start. This is partly done by applying the conceptual power framework (see chapter 3), and the ‘translated’ transition concepts (section 7.1), in their adapted and extended form. This chapter has proposed several adaptations and additions, the most important ones being:

- the reconceptualization of *systemic power* (section 7.2),
- the distinction between *radical* and *moderate* power exercise (section 7.2)
- the distinction between *active* and *passive* power exercise (section 7.3)
- perspectives on the *ethics* of power in sustainability transitions (section 7.4)
- more explicit attention for *discursive* power (section 7.5)
- sustainable power relations as a *substantive* part of sustainability (section 7.6)

Some of these adaptations and additions lead to an extension of the conceptual power typology, and a reconsidered ‘translation’ of transition concepts. When synthesizing this, we get a three-dimensional typology along the following dimensions: 1) passive vs. active, 2) moderate vs. radical, and 3) innovative, transformative, reinforcing or systemic. This typology can be visualized as follows:

	innovative power	transformative power	reinforcing power	systemic power
	moderate	radical		x
passive	passive / moderate niche-regimes	passive / radical niche-regimes		passive regimes
	passive / moderate niches	passive / radical niches		
active	active / moderate niche-regimes	active / radical niche-regimes		active regimes
	active / moderate niches	active / radical niches		
x	dominant landscape trends		undercurrent counter-movements	

Table 15. Typology of transition concepts along three power dimensions

However, the most important adaptations and additions are not so much about developing new typologies or definitions. Rather, the most important reconsideration is the way in which the power concepts are used to answer questions about empirical cases. The empirical case-studies in this dissertation were analyzed according to 4 main questions, which were further specified in sub-questions that related to separate transition concepts and power typologies (see chapter 3, section 3.5): 1) what is the transformative sustainability ambition, 2) how is power exercised?, 3) how and to what extent are actors empowered, and 4) what is the overall transition potential?

These four separate questions were partly based on a separation between transition concepts and power concepts. Based on the discussion and synthesis in this chapter, I now reformulate these questions, and reconsider the way in which they are answered, partly by adding new sub-questions. The most important element in that regard is treating power as a substantive issue in sustainability, rather than merely as a process issue. As such, when discussing the first question – what is the transformative sustainability ambition (of specific groups of actors under study)? – this involves a sub-question on how and to what extent (future) power relations are discussed as part of that transformative sustainability ambition. Moreover, an additional sub-question is how the transformative sustainability ambitions relate to dominant landscape trends and counter-movements. This involves an explicit question on how the discourse of groups of actors under study relates to broader discourses. Last but not least, another additional sub-question is how and to what extent the groups of actors under study look beyond the system boundaries of the sector or region in which they are active, i.e. to what extent they consider the interrelation with other sectors and regions when discussing sustainability.

As for the second question on power exercise, I propose to place more emphasis on the power dynamics between different groups of actors under study. Rather than focusing on the power exercised within one specific case, the focus would be on the interaction with and comparison with other cases. While in this dissertation I did discuss the interaction between the ‘niche-regimes’ under study, this was not a main focus, as it was mainly focused on discussing the internal power dynamics and relations in separate case-studies. When an analysis would involve a more diverse selection of cases – including regimes, niches, and niche-regimes, both radical and moderate, both passive and moderate – the focus of analysis can be shifted to the interaction between these cases. While the internal power dynamics and relations within these cases remain interesting, I argue that the external power dynamics and relations between different cases are more interesting for a power-in-transition analysis.

Moving on to the third question on empowerment. For that I propose to pay more attention to the empowering effects of discourse, by adding an explicit sub-question on how the discourse(s) used by groups of actors seem to (dis)empower the participants involved. While this was discussed in the empirical case-studies (when answering questions on intrinsic motivation and interpretative styles) I argue that it should be treated more explicitly. In this dissertation, the empowering potential of transition discourse was primarily explored in the separate intermezzo on *Transition Discourse and Sustainable Mobility*, and thus separated from the cases under study. Although such

separate discourse analysis is still useful as a background analysis to contextualize the cases within broader discourses, the role of discourse can also be integrated in the power analysis of cases themselves, by considering how wider discourses are used within these cases, and to what extent the involved practitioners are (dis)empowered by the use of these discourses. Moreover, I also propose to link the discussion on empowerment, and the analysis of ‘intrinsic motivation’ and ‘prevailing interpretative styles’, to ethical perspectives on power and the impact of these perspective on practitioners’ (un)willingness to exercise power. This can be done by adding a sub-question on which ethical perspective (consequentialist, deontological, virtue-oriented) the groups of actors have, either implicitly or explicitly. This can be done by analyzing the ethical assumptions and struggles underlying the way in which practitioners’ discuss and justify their exercise of power (or the lack of such discussion/justification).

Last but not least, we can extend the question on transition potential. In the empirical case-studies, this question was answered by critically discussing the power relations and (dis)empowerment paradoxes that were implied by the future visions, plans, and proposals of the projects and programs under study. This is an important element of the power-in-transition analysis, which can be brought a step further by using the notion of ‘sustainable power relations’ as conceptualized in section 7.6. Based on that notion, one can critically discuss the plans and future visions as proposed by groups of actors by asking whether and to what extent these imply sustainable power relations and intrinsic motivation, possibly involving the notions of ‘(green) Panopticons’ and ‘social thresholds’ (as illustrated in section 7.6.). Do the future visions on ‘sustainable systems’ involve an image of (green) Panopticons? Are the concerns about ‘breaching ecological thresholds’ accompanied by concerns about ‘social thresholds’, and do they take into account issues of social justice, democracy, self-determination, and equity?

Moreover, the hypotheses as formulated in section 7.7.1., can also be used to evaluate or explore the transition potential of initiatives, both finalized and ongoing, as well as planned initiatives. We can translate the seven hypotheses into empirical questions to be asked about initiatives with transformative sustainability ambitions (see table below). This set of questions is not entirely separate from the previous first three questions (on ambitions, power and empowerment). Rather, the question on transition potential is about a synthesizing all the answers to the previous questions, and evaluating this in terms of the ‘overall’ transition potential of initiatives.

Obviously, answering these questions on transition potential is not a matter of black or white ‘yes’ or ‘no’ questions, but rather about discussing *the extent* to which the questions can be negatively or positively answered. We can then hypothesize that *the extent to which* the answers to these questions for particular initiatives can be answered positively, indicates the extent to which these initiatives have transition potential (i.e. the capacity to contribute to sustainability transitions).

Evaluating 'transition potential' by questioning to what extent the initiative does/did/will...
<i>Question 1:</i>
... draw on the collective exercise of transformative power, i.e. do they involve social (counter-) movements and 'radical' groups of actors that challenge dominant trends at the landscape level?
<i>Question 2:</i>
... interact with diverse groups of actors: regimes, niche-regimes, and niches, both radical and moderate, both passive and active?
<i>Question 3:</i>
... have independent, cooperative, and antagonistic power relations with other niches, niche-regimes, and regimes?
<i>Question 4:</i>
... exercise power in an active way (i.e. mobilize physical resources), and does/did/will that facilitate the active exercise of power by radical niche-regimes?
<i>Question 5:</i>
... use transformative sustainability discourse to engage with regime discourse, while also challenging this regime discourse? Is the temptation resisted to institutionalize and formally impose this discourse in a top-down manner?
<i>Question 6:</i>
... involve participants with a sense of power and the willingness to exercise power to exercise it to achieve their transformative sustainability ambitions? Do they (know how to) deal with the inherent ethical dilemmas of such exercise of power?
<i>Question 7:</i>
... strive for sustainable power relations, both now and in the future; are they oriented towards the intrinsic motivation of individuals, and aware of the limits of 'social thresholds'?

Table 16. Questions to evaluate the transition potential of initiatives

Alternatively, one can also invert the logic, and rather than using the hypotheses to question the transition potential of initiatives, one can analyze and compare historical and ongoing initiatives to 'test' these hypotheses. This is not necessarily about 'falsifying' or 'validating' the hypotheses through case-analysis, but may also be about exploring the extent to which these hypotheses and proposed notions are useful guidelines to discuss and interpret sustainability initiatives (and whether there are other issues that are not included). This brings me to the research methods for power-in-transition analysis.

7.7.3. Methodologies to apply the power-in-transition framework

There are several research methods to apply the power-in-transition research framework. Although it would not be my own preferred approach (see chapter 2), it is an option to 'test' and 'adapt' the hypotheses, in terms of testing to what extent they accurately explain or predict the 'transition potential' of initiatives. This would require comparative research between a large number of ongoing initiatives, as well as an ex post evaluation of the extent to which these initiatives did contribute to sustainability transitions, including quantification of indicators, statistical data-collection and analysis, ex post longitudinal historical and comparative analysis of past and ongoing initiatives. This would obviously limit and exclude certain notions, and require operationalization of hypotheses and research questions in quantifiable indicators to 'measure' the transition potential of

an initiative, (e.g. amount of physical and monetary resources mobilized over an x amount of time, or survey indicators to count amount of resources that participants are willing to invest in the initiative to reach a particular goal, etc).

However, the power-in-transition framework is more suitable for interpretative and qualitative analysis. Therein the purpose would not so much be to 'test' hypotheses, nor to 'measure' the transition potential of ongoing initiatives in absolute terms, but rather to describe, deconstruct, and discuss how actors (try to) exercise power to enable sustainability transitions. Or in other words, this would be the same kind of research that was done in this thesis, but it would do so in an improved way, asking more specified questions in a more structured manner. For that purpose, I recommend the same *type* of qualitative research methods as used in this thesis (see chapter 2), albeit it with some considerable alterations and additions. Data can be collected in a more structured and systematic matter, by using the power-in-transition research framework as a guideline for interviews, participant observation and document reviews. Obviously, this was not the case in this thesis as the power-in-transition framework presented here was only fully developed after the empirical data collection. This was an appropriate choice for the purpose of explorative research, but such approach is less appropriate for further research.

Starting off with a power-in-transition research framework, means that less time can be spent on 'ethnographic observations' and 'unstructured field notes', and that gained time can be spent on doing more interviews, structured participant observation, and document reviews. Therein power can be more explicitly and systematically discussed, also asking practitioners more in-depth about their experiences with power. The interviews used for this research, were all different in shape and form (depending on the project context), and even though power came up most of the time, it was not always as explicitly and elaborately discussed. Often respondents started talking about power themselves, and/or interpreted power in their own way. This has several advantages for explorative research on the role of power, but disadvantages for a comparative understanding of the different ways in which people exercise power in their daily activities. The power-in-transition framework can be used to ask much more in-depth and detailed questions about power. Especially the operationalization of empowerment as intrinsic motivation is helpful to ask specific interview questions on individuals' sense of impact, competence, choice, and meaning, and to relate this to individuals' (un)willingness to exercise power to realize a transformative ambition.

As for action research, although this is not a necessity to study the transition potential of ongoing initiatives, it can significantly increase the insights gained from the power-in-transition framework. More importantly, action research can help to further improve the framework and its added value in terms of also exploring and facilitating the *practical* application of the framework *for* and *by* practitioners. In the next chapter on transition management, I discuss how the power-in-transition framework can be used for such *transdisciplinary* and *participatory research*.

7.7.4. Positioning power-in-transition framework in state-of-the-art transition studies

How can the power-in-transition framework be positioned regarding the state-of-the-art in transition studies? To a certain extent, this question has been partly answered through out this chapter, as I explicitly proposed to redefine and reconceptualize several transition concepts in power terms. I will not repeat all this here, but rather focus on shortly specifying how the power-in-transition framework differs from the way in which other transition researchers have approached power (as described in chapter 3, section 3.1.)³⁴⁹. The main difference obviously lies in the way in which the distinction and interaction between niches, niche-regimes, and regimes is characterized. As explained in chapter 3, this distinction and interaction differs for the three ‘schools’ in transition studies, and, as such, my power-in-transition framework also relates to these schools in different ways.

Regarding the socio-technical school, I can be short. In chapter 3 (section 3.1.5) I already extensively discussed how I disagree with Geels’ approach to power as a specific ‘ontology’ or ‘causal mechanism’ that supposedly can be distinguished from other ‘ontologies’ or causal mechanisms. Moreover, my power-in-transition framework proposes a reconceptualization and extension of the socio-technical multi-level framework, as extensively discussed in the previous sections and as visualized in the multi-level Multi-PIT picture (see section 7.2.1). In the conclusion of this dissertation, when discussing the overall scientific contributions, I will further discuss how this research complements the socio-technical understanding of sustainability transitions.

Moving on to the governance perspective on transitions. As discussed in chapter 3 (section 3.1.7) the governance perspective relates the multi-level framework in transition studies to Clegg’s (1989) multi-leveled power framework (Grin 2010, Grin & Miltenburg 2009), which distinguishes between *relational*, *dispositional* and *structural* power. As argued in chapter 3, the horizontal power typology in my framework differs from Grin’s vertical multi-leveled power typology, and I believe such horizontal power typology to be more suitable to study actor-specific power dynamics through time. This however does not mean that the two typologies are mutually exclusive. On the contrary, my horizontal power typology can be seen as complementary to the multi-leveled power typology as proposed by Grin, in the sense that my typology further specifies the different ways in which ‘relational power’ can be exercised (i.e. how power is exercised at the actor level). All types of power exercise (innovative, destructive, reinforcing, transformative, and systemic) refer to the capacity of actors to achieve results (‘relational power’). However, these different types of power exercise are also about the different ways in which actors can engage with existing ‘dispositions’ and ‘structures’, by either reproducing or renewing them (see figure below).

³⁴⁹ I will thus also not describe how other transition researchers have approached power, nor how I justified the need to develop a new and separate power in transition framework, for that was also already done in chapter 3, section 3.1. This section is focused on shortly discussing differences and implications.

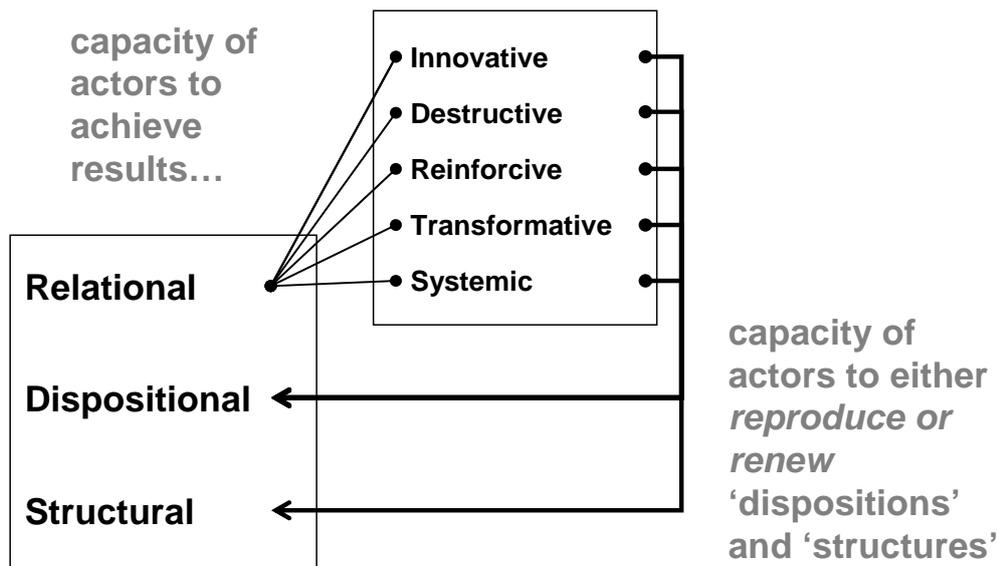


Figure 19. Linking typology of power exercise to multi-level power typology Grin (2010)

As such the two typologies are not mutually exclusive. The only difference is that while Grin places niches at the 'relational level', regimes at the 'dispositional level', and the landscape at the 'structural level', I propose to study both niches and regimes, as well as niche-regimes and landscapes, at the relational level; approaching all these entities as groups of actors that have different capacities to either reproduce or renew dispositional and structural conditions, including the collective capacity of social movements to challenge dominant landscape trends and to shape new, alternative counter trends.

The differences between the systemic transition perspective on power (De Haan and Rotmans 2011, Loorbach and Rotmans 2010, De Haan 2010), and my power-in-transition framework, are primarily epistemological and have already been extensively discussed (section 3.1.6). This included, amongst others, my focus on power exercised *by actors*, in contrast to De Haan's functionalist understanding of power as the amount of impact of 'constellations' on functional subsystems. In addition to the issues discussed in chapter 3, more specific differences can be identified on the basis of the way in which I have translated transition concepts in power terms and the way in which I theorized power in transition. In the systemic perspective on transitions, a niche-regime is characterized as an 'empowered niche', a niche that 'has grown powerful enough' to 'attack' or 'take over' the incumbent regime. While this is a quantitative distinction that mainly revolves around the *amount* of power exercised, I propose a more qualitative distinction between niches, niche-regimes, and regimes, in which these entities are groups of actors that primarily exercise power in a *different way*. As such, a 'niche-regime' is not necessarily the same as an 'empowered niche' (which it is in the systemic perspective). According to my framework, the exercise of transformative power by niche-regimes (i.e. inventing and developing new structures and institutions), is *inherently and qualitatively* different from the exercise of innovative power by niches (i.e. inventing and creating new resources). Obviously it helps if these two types of power exercise enable and support one another (i.e. if niches and niche-regimes cooperate), but this is different from saying that one is the 'superlative' of the other.

Another implication of my framework is also that there is not necessarily such a thing as *one* regime that dominates the functioning of the societal system³⁵⁰. If regimes are groups of actors that exercise reinforcing power (rather than that one constellation that exercise the ‘most’ power), this means there can be several regimes, including large and small regimes, i.e. big groups of actors that exercise a lot of reinforcing power, or small groups of actors that exercise a little amount of reinforcing power³⁵¹. The fact that regimes – by definition – exercise more *reinforcing* power than niches or niche-regimes do, does not mean that they exercise more power in an absolute sense, for niches and niche-regimes on their turn can exercise more innovative and transformative power than regimes do. Because niches, niche-regimes, and regimes can exercise power in different ways they can co-exist, each in their own ‘territory’, with their own strengths and weaknesses. On the other hand, they can also compete, cooperate, support, or restrict on another. These are empirical questions, and by conceptualizing the different possible power relations between niches, niche-regimes, and regimes, such empirical analysis is enabled, rather than conceptually precluding that regimes have ‘more’ power than niches, as is the case in the systemic perspective on transitions.

Furthermore, one of the main difference in my power-in-transition framework is thus that the ‘growth’ and ‘empowerment’ of (radical) niches and niche-regimes is not merely a property of the bottom-up transition pattern (which De Haan 2010 calls the ‘empowerment pattern’), but also a property of the other transition patterns (top-down ‘reconstellation’ or regime ‘adaptation’). In fact, my first hypothesis is that the collective exercise of radical niches and niche-regimes at the landscape level, i.e. their *systemic power* as counter movements, is a necessary condition for a sustainability transitions to occur (no matter what the specifics of underlying patterns or drivers are). Related to that, I argue that ‘regime-replacement’ within a specific subsystem is not a sufficient condition for a systemic transition to occur. A systemic transition also requires that dominant landscape trends are replaced by undercurrent counter-movements, and that not only regimes within subsystems are replaced, but also that *new* functional subsystems are created (involving a restructuration of the functional *boundaries* of existing systems).

Having said that, there are also some elements in my power framework that correspond with the systems theory perspective as presented by de Haan and Rotmans (2011). More importantly, there are several ways in which the different theoretical perspective could enrich and complement one another. While so far I emphasized the qualitative distinctions in my framework, there are also some inherently quantitative distinctions. In the typology of power relations, an ideal type concerns a situation in which A exercises *more* power than B, in terms of A mobilizing *more* resources than B. It would be interesting to explore to what extent this power relation corresponds with De Haan’s ‘functional impact’ on the system. To what extent is the most dominant ‘constellation’ equal to the constellation that mobilizes ‘most resources’? I have argued *theoretically* that A exercising more power than B does not mean that A has power over B, and also I

³⁵⁰ This in contrast to De Haan (2010), who argues that there is by definition only *one* regime in a societal system

³⁵¹ This corresponds with Loorbach’s idea of multiple regimes (2007).

emphasized that of A and B can exercise different types of power. But how do these three types of power relations interact and what do they amount to, in systemic terms? I have defined systemic power as the collective exercise of power at the landscape level, including the collective capacity of actors to form new landscape trends and create new functional systems, and I contended that such systemic power includes all the other types of power exercises. But *how* exactly do different exercises of power by individual actors 'aggregate' at a collective, systemic level? An integration of De Haan's systemic transition model with my actor-specific power in-transition framework, would help to answer such questions. Rather than making this a merely conceptual theoretical endeavor, the ultimate challenge would be to translate this in *empirical* research questions and to answer these through a combination of both quantitative and qualitative research methods, including statistics, surveys, interviews, and longitudinal, historical and comparative analysis of the power exercised by 'constellations' or 'groups of actors' over the course of time.

CHAPTER 8.

Empowering Transition Management

This chapter aims to empower the transition management (TM) model, by integrating insights on power and empowerment in the prescriptive TM-model. First, empirical lessons on TM are discussed in reference to the case-studies. Second, basic power and empowerment principles are formulated. This is done on the basis of empirical insights and theoretical insights from the previous chapter. The hypotheses on power-in-transition, as formulated in chapter 7, are now translated into process principles. Third, these principles are operationalized in a participatory 'power tool' and 'empowerment tool', and it is discussed how these can be used in a TM process.

"We can confer authority; but power or capacity, no man can give or take (...) I do not think that power can be delegated because I believe that genuine power is capacity (...).

Power is not a pre-existing thing which can be handed out to someone or wrenched from someone (...).

Where the managers come in is that they should give workers a chance to grow capacity or power for themselves (...).

The aim of every form of organization should be not to share power, but to increase power, to seek the methods by which power can be increased in all".

Follet in: Boje & Rosile 2001:90,102

Before moving on, I want to remind the reader that none of the projects and programs under study were designed ‘according to’ the prescriptive TM-model. Rather, practitioners used TM-concepts to (help) develop and/or evaluate ongoing processes. Moreover, the cases under study primarily demonstrate how TM-ideas ‘land’ at the tactical and operational level, not how TM has been and is being used and discussed at more strategic policy levels. As such, these projects and programs are not representative for the ‘full-fledged’ TM-model, which has been applied far more elaborately and successfully in other cases (Loorbach 2007, 2010). Therefore, the purpose of this chapter is not to question the value of TM, nor to evaluate its overall success in practice. Rather, this chapter is about discussing challenges that emerged in attempts to apply TM-ideas, as observed in the cases under study, and to learn and discuss how we might deal with these challenges. The reader is invited to look at these challenges from the perspective of managers and participants, which mostly worked at the tactical and operational level. Concepts on power, empowerment, and discourse, as introduced, applied, and discussed in the previous chapters, are used to interpret and explain the challenges that were empirically observed, and to draw lessons from that for both for practice and research.

8.1. EMPIRICAL INSIGHTS & LESSONS ON TRANSITION MANAGEMENT

All cases demonstrated how attempts to apply TM come with serious challenges. When we look from the perspective of TM-literature, we can argue that even though the *label* of ‘transition management’ was used, it was ‘not really’ applied:

A danger lies in a haphazard and thin application of transition management so that it is hardly an improvement compared to regular (innovation oriented) policies. The ‘label’ transition management is increasingly used for projects and processes that are not fundamentally different from regular projects and processes, often stimulated by funding agencies that ask for ‘transition’ projects (without using strict or scientific criteria). In reality, these are often more optimization or innovation projects or trajectories than transition processes (Loorbach 2007: 287).

One could argue that the cases in this dissertation demonstrated such ‘thin application’ of TM, ‘hardly an improvement compared to regular projects and programs’, a matter of ‘optimization’, ‘regular innovation’, and ‘usage of the transition label for strategic purposes’. While there may be a certain ‘truth’ in such interpretations, it is more constructive to understand why and how such ‘thin applications’ of TM occur, and how these can be dealt with:

The ‘freedom of application’, i.e. the possibility to interpret and use the transition management approach freely is inherent in the approach, which certainly in the beginning lacked preciseness. Even our own approach and model are still ambiguous in some sense and our thinking is continuously in development. It is, however, necessary to be reflective and analytically strict in evaluating and learning from the diversity of practices (Loorbach 2007: 287)

Based on my empirical cases I distinguish three main challenges in attempts to apply TM. First, practitioners struggled with the application of transition (management) terminology.

Second, several practitioners seemed incapable and/or reluctant to apply the ideas of TM in the projects or programs. Third, the attempts to ‘transition’ ongoing projects and programs primarily resulted in a fragmentation of project and program activities. In this section, these challenges are discussed from four perspectives: 1) discourse, 2) empowerment, 3) power, and 4) action research. These perspectives provide not only insights on why these problems occurred in these cases, but also lessons on how these challenges can be dealt with.

8.1.1. Discursive insights & lessons on TM

In the empirical analysis, it was described how practitioners struggled with transition (management) and sustainability terminology. Often practitioners commented that they found the terminology vague and abstract. Moreover, the concept of TM came with various other associations. In the case-study of the A15-project it was described how participants tended to think it terms of dichotomies, categorizing each other in ‘those who think short-term’ and ‘those who think long-term’. Subsequently, these categories came with various other associations, e.g. those who think long-term were believed to focus more on sustainability, societal interests, organizational issues, process issues, ideals, normative issues, and so on, while those thinking short-term were believed to focus more on accessibility, technological issues, substantive transport issues, objective concerns, and so on. In a discourse analysis of the A15-project (Avelino and Bressers 2008, Bressers et al. 2011), it was observed that TM was contrasted with ‘normal project management’, and that this came with several other associations (see table below):

‘Regular’ project management	Transition management
Short Term/ the present	Long Term / the future
Accessibility	Sustainability
Technological / economic focus	Societal / ecological focus
Substantive	Process-oriented
Concrete	Abstract
Operational	Strategic
Action, ‘doing something’	Reflection, ‘thinking about it’
Fast process / quick project outcomes	Slow process / no project outcomes
Pragmatic & realistic, solutions & measures	Idealistic, ideas & visions
Quantitative	Qualitative
Objective	Subjective

Table 17. Dichotomous associations with transition management³⁵²

Interestingly, transition management positions itself explicitly as an approach that breaks through dichotomies: 1) linking sustainability to other targets such as accessibility, through a participative process in which economic, ecological, and societal issues are explicitly integrated, 2) integrating process and substance, and 3) bringing in the long-term temporal perspective and relating the ‘now’ to the ‘future’, by linking current actions

³⁵² While this column of dichotomies and associations came forth from a discourse analysis of the A15-project, these observations also apply to the other case-studies more generally (see ch. 4 & 6).

to future ambitions through transition scenarios, back casting techniques and ‘transition paths’ (Sondeijker 2009, Loorbach 2007). However, participants did not seem to see TM in this way. Instead, the majority seemed to associate TM primarily with *one side* of the dichotomies (the right column): thinking about the *future* solely, a *process* tool, something that is *only* about the ‘ideal’ of sustainability, and so on.

The main reason for these ‘one-sided’ associations with transition management is that TM-discourse was often used to *counterbalance* the prevailing discourses in the projects and programs, which happened to focus primarily on the notions in the left column. As TM was used to counterbalance, it came to be seen as opposing rather than integrating. We see the same phenomena occurring with the notion of sustainability. Theoretically, the notion of sustainability integrates economic, social, and ecological interests, and links the present to the future. However, because it is often used to *counterbalance* discourses that primarily focus on short-term economic interests, it becomes primarily associated with long-term environmental and societal concerns, and it becomes seen as ‘opposing’ to short-term interests and economic concerns. I argue that these opposing associations with sustainability and TM explain a large part of the challenges with its application. When transition management is seen as a threat to short-term success in the realization of a project/ program, it is understandable that practitioners become reluctant to apply it, or apply it only partly in a separate side-activity (thus fragmenting projects/programs).

Now the question is whether and how this challenge, or rather the *source* of this challenge, can be dealt with. It can be argued that transition management is not only an operational process model, but that it is also a process *philosophy*, a way of thinking that breaks through dichotomies, replacing fragmented ‘either-or’ logic with an integrative ‘and-and’ logic, (i.e. short *and* long-term, process *and* content, technology *and* organization, doing *while* reflecting, and so on). However, applying this philosophy in practice is easier said than done. It is a human tendency to think in dichotomies and categories; identity is created on the basis of distancing oneself from a particular category, and blurring boundaries is ‘scary’. As argued previously, transition (management) discourse is all about ‘blurring boundaries’, and tends to be inherently paradoxical. In the intermezzo on *Transition Discourse and Sustainable Mobility*, I argued that even though transition discourse has been ‘blamed’ for such contradictory elements and ‘shape shifting’ (Shove & Walker 2008), this may well be one of its more empowering dimensions: “the ability to hold two opposed ideas in the mind at the same time, and still maintain the ability to function” (F. Scott Fitzgerald in *The Crack-Up*, 1936). This potential strength, however, depends on individuals’ capacity to engage in such ‘paradoxical thinking’, which is a rare skill.

One conclusion that could be drawn from this is that the application of TM requires particularly skilled ‘leaders’, which concurs with the emphasis in TM-literature on ‘frontrunners’ (see chapter 3, section 3.1.). However, if transition management aims to engage and empower a wide range of actors, it is more interesting to ask how the underlying philosophy of TM can become more accessible to more people, (rather than specifying ideal-type individuals that already think this way). I argue that doing so requires much more attention to the concrete tools and instruments that TM has to offer, not only

in scientific literature, but especially in the way it is presented and introduced to practitioners. Transition management should explicitly position itself as an approach that *breaks through* dichotomies, and offers concrete and accessible techniques to do so.

In the last couple of years various ‘TM-tools’ have been developed, including integrated system analysis (Grosskurth & Rotmans 2005, Loorbach 2007:202), scenario exercises (Sondeijker 2009), monitoring frameworks (Taanman forthcoming), ‘transitioning’ and experimentation tools (Kemp & Van den Bosch 2006, Van den Bosch 2010). Each of these tools breaks through dichotomies, by integrating process and substance, short and long-term, reflection and action. However, the problem with these tools – or rather the way in which they are often presented – is that their accessibility to practitioners has been limited. The tools mentioned above are often described in extensive PhD-dissertations, and applying them in practice requires a rather costly and time-consuming process that often implies the involvement of ‘TM-experts’.

Having said that, there have been several recent attempts to translate TM in more practical tools, and to make these accessible to practitioners. The *Competence Centre for Transitions* (CCT) collected TM-insights and presented these on a website for ‘transition practice’ available to all, attempting to formulate these insights in accessible terms³⁵³. Such practical translation of transition (management) insights has always been an explicit ambition of ‘the transition network’ and the *Knowledge Network for System Innovations and Transitions*. Moreover, the *Dutch Research Institute for Transitions* is continuously engaged in developing tools, guidebooks, and readers that aim to capture transition management methods and insights in accessible terms, also by learning new insights from action research activities, and on that basis adapting transition management concepts.

However, the problem with this vast collection of ‘tools’ and ‘techniques’ is that practitioners are expected to understand and ‘choose for’ a TM approach, and apply its provided ‘tools’ and ‘techniques’, before they even understand what it actually *means*. The literature emphasizes that TM is not just a toolbox with ‘tricks’ from which practitioners can freely ‘pick and choose’; it is presented as a holistic governance approach. One does not want the approach to be applied in a superficial way, or cut down to a set of technocratic process ‘instruments’, ripped down of their philosophical basis.

However, I argue that rather than communicating the whole philosophy of TM, it may be more effective to convey smaller insights and principles that practitioners can apply themselves, *before* practitioners entirely understand, ‘choose for’, or agree with a TM-approach. In order for practitioners to get *acquainted* with the underlying philosophy of TM, it is necessary to formulate such smaller insights for practitioners to think and experiment with. The insights and principles in this chapter, on power and empowerment, aim to contribute to such efforts.

³⁵³ See: www.transitionpractice.nl

8.1.2. Power insights & lessons on transition management

In the projects and programs under study, one of the main challenges with the application of TM concerned the power relations between the actors involved. All three case-studies were oriented towards cooperation between government, business, and science. One can argue that the 'tripartite' constructs of 'demand-driven' research and 'public-private' partnerships provide initiatives with a diverse power basis, as various actors get involved that can exercise different types of power. Such 'transdisciplinary' and 'cross-sectoral' cooperation is an essential aspect of transition management (Kemp & Rotmans 2009). However, such cooperation can cause problems when project-leaders are incapable of standing up against the demands of powerful businesses and governmental institutions that participate in a project. In all three case-studies, it was observed that there were unbalanced power relations between business, government, and science actors. While theoretically all actors were mutually dependent on each other to 'make the project work', in practice there seemed to be a situation of one-sided dependence, in which project-leaders were primarily dependent on government and business actors.

It was striking to notice how TM-discourse on involving 'regimes' and 'niches' was used in this regard. Theoretically, this discourse is meant to empower innovative actors to oppose, overcome, and transform vested interests. However, in the projects/ programs under study, participants tended to use this 'niche-versus-regime' terminology to *confirm* the dominant position of 'regime-actors' as a 'given', rather than as something to be overcome. Managers feared that by involving more 'niche-actors', or by giving them more decision-making power, this might upset the 'regime-actors', such as members of the steering group (who could decide to end their involvement in the project, which would imply the redrawing of financial resources). There was also a tendency to avoid public disagreement or fundamental discussion on sustainability, in order to 'keep every one on board'. Or in other words, there was a tendency to avoid antagonistic power relations, in order to safeguard synergetic power relations.

This lack of antagonistic power relations also had to do with actors that were *not* involved. In all three case-studies it was observed that the involvement of civil society was limited or even absent. I argue that the need to involve civil society needs to be emphasized more in TM-literature, and that it also needs to be more clearly specified what qualifies as 'involving civil society'. The TM-literature prescribes that initiatives should not only include business, government, and science, but also 'societal' and 'non-governmental' organizations. But what exactly constitutes a 'societal' or 'non-governmental' organization? Officially, trade-unions, lobby-clubs, and network organizations also qualify as 'societal' and 'non-governmental', thus theoretically fulfilling this 'criterion'. However, the point about involving the 'societal' and 'non-governmental' sector is not so much about the official legal status that the organization has (i.e. 'a foundation' or 'association'), but rather about the *group of actors that is represented*. While a trade-union is not a business entity, it does represent business interests. While environmental organizations are often non-governmental, most of the environmental organizations that were involved in the projects/programs under study were 'semi-governmental', and/or primarily oriented towards enabling public private partnerships.

The representation and involvement of civil society – in the sense of actual citizens and grassroots initiatives – remained limited, or even absent. As such I argue that the TM-model should be much more explicit about the involvement of civil society as a necessary condition for an initiative to contribute to sustainability transitions. This also relates to the involvement of *radical* niches and *radical* niche-regimes that have an antagonistic power dynamic with regimes. As discussed in previous chapters, the projects and programs under study can be characterized as ‘moderate niche-regimes’ that primarily had *synergetic* relations with the regime. Antagonistic power dynamics and fierce debates on sustainability were avoided. I argue that antagonistic power dynamics between radical and moderate groups of actors should be an explicit component of a TM- process. Therein, the task of a ‘transition manager’ is not to ‘instigate antagonism’, ‘choose sides’, or to ‘speak on behalf’ of anyone, rather the point is to involve actors with differing backgrounds and beliefs, and to stimulate debate amongst both radical actors that have an explicit antagonistic relation with the regime, as well as moderate actors that have a synergetic relation with the regime.

Besides the power relations between business, government, and science actors – and the lack of civil society actors – there were also internal power struggles within these groups. In all three case-studies, there was significant competition between different research institutes and advisory departments, on what kind of research methods or modelling techniques to use, or what process models to apply. One of the problems with transition management was that – in this context of ‘competing’ process models – it was seen as a ‘threat’ to other process models and participatory approaches. This was confirmed by TM-researchers (including myself) that tended to position TM as ‘the best approach’ that could and preferably should replace other process models. Retrospectively, I argue that it would be more effective if TM were positioned as a process model that can *integrate and enrich* various other process models by placing them in a long-term and societal context.

Last but not least there is the question of what kind of power exercise and power dynamics TM is supposed to facilitate. As discussed in previous chapters, the projects/programs under study primarily exercised a *passive* form of power, focused on enabling *others* to exercise power. In that context, TM was also mainly used to exercise such passive power, with a focus on developing plans, visions, tools, and coalitions, to be made use of ‘later on’. The problem with such passive forms of power is that it is easily ‘absorbed’ by regime actors that can afford to *materialize* the proposed ideas. While one can argue that this was mainly a problem in the projects/ programs under study, one also has to acknowledge that the literature on TM offers little concrete guidelines on how to actually *materialize and implement* transformative ambitions. So far, TM has offered numerous ideas on how to mobilize mental and human resources (‘visions’ and ‘coalitions’), but it has offered little to no concrete guidelines on how to mobilize *physical* resources and *materialize* new structures; how to design new products (innovative power), how to *implement* new financial and legal institutions (transformative power) and how to *make use of existing institutions* and infrastructures that enable change (reinforcive power). I argue that TM needs to pay much more attention to this *active* exercise of power; i.e. to the materialization and implementation of new structures and institutions, and to the mobilization of new physical resources.

This also requires attention for the *conditions* for such *active* power exercise; access to resources, skills, strategies, and willingness. This goes way beyond ‘looking for visionary individuals’ with creative ideas, strategic ambitions, and networking skills. This also requires *legal and financial training, political lobbying skills, business models, and the willingness to engage in legal, economic, and political struggles*. Moreover, I argue that it does not suffice to ‘prescribe’ that it is necessary to ‘involve’ people with the necessary legal, economic, and political skills. Rather, if the transition management model wants to empower practitioners, it needs to *include* a certain level of legal, economic, and political expertise, and be able to answer the following questions: how can individuals with transformative ambitions gain access to physical resources, which financial and economic constructions facilitate sustainability transitions, and which innovative business models work in practice? I come back to this with more concrete suggestions in the section on power and empowerment principles for transition management.

8.1.3. Empowerment insights & lessons on TM

As discussed in chapter 3, transition management is positioned as an approach that aims to ‘empower’ practitioners: “the ultimate goal of transition management should be to influence and *empower* civil society in such a way that people themselves shape sustainability in their own environments, and in doing so contribute to the desired transitions to sustainability” (Loorbach 2007: 284, emphases added). More specifically, TM aims to ‘empower’ niches, by facilitating the ‘clustering’ of niches and the ‘emergence’ of niche-regimes that can eventually ‘take over’ and ‘replace’ incumbent regimes (Loorbach & Rotmans, 2010). However, in the cases under study, the empowering effects of TM were limited, and in some cases it was even applied in such a way that it seemed to be *disempowering*.

In the case-studies on Transumo and the A15-project, it was described how transition (management) terminology was primarily used out of *extrinsic* motivation. Project documents were written and translated in transition terminology primarily because this was ‘expected’ and formally ‘required’ by Transumo, not because the authors seemed to master, or care about, the meaning of these concepts. The imposed transition-terminology seemed to have a negative effect on the participants’ sense of impact, meaning, competence, and choice. Because it was imposed from above participants had the feeling that they did not have a choice in applying it. Rather than being an ‘origin’ of the language they used, they seemed to be ‘pawns’ in a broader transition discourse. Moreover, transition concepts tend to illustrate how complicated and interconnected the transportation system is, how persistent unsustainability problems are, how much need there is for (more) radical system innovations, and how long it will take before this can happen. As most projects under study were geared at concrete improvements of only one specific subsystem of ‘the mobility system’, the confrontation with the ambitious transition discourse lowered participants sense of impact; instead of making them feel that they were making a difference, it suggested the opposite.

While transition concepts are in theory especially suitable to create a sense of ‘meaning’, the way in which they were applied in the cases under study hardly succeeded in doing

that. Many participants (including transport engineers and practical businessmen) found the transition terminology particularly difficult to understand (theoretical, abstract, overly ideological, etc.), and it did not provide them with a higher sense of meaning about what they were doing. Moreover, it made participants dependent on ‘experts’ that would ‘explain’ the transition terminology to them, a process that can (willingly or unwilling) suggest that participants lack the intellectual competences to ‘understand’ the philosophy on transitions. As such, not only did the use of transition terminology not succeed in providing participants with a sense of *more* choice, impact, meaning, and competence, it actually caused *less* of all four, thus having a negative impact on intrinsic motivation³⁵⁴. The main problem in these projects under study was the top-down manner in which the transition discourse was imposed at a relatively late stage of the process, despite of the apparent tensions with the project themes (i.e. optimization, efficiency, and accessibility).

From an empowerment perspective, the suggestion is to carefully consider whether TM is at all appropriate for an ongoing process. If TM-concepts are found to be useful (by the participants themselves), a next suggestion would be to translate transition-terminology into a context-specific ‘local language’, before bringing it in to a program or project. Such translation should not be done by an outsider who imposes it onto the project. Instead of formally requiring participants to translate their project in terms of a strategic transition language, it should be explored whether and how participants can use TM ideas to complement their project and program themes. In some cases it might be preferable to translate the *ideas* of TM into a less abstract and more context-specific language. Moreover, rather than presenting TM as something required by academia or the government, it can be positioned as a set of concepts that managers and participants can use to empower themselves to deal with context-specific challenges. That way they are deliberately using TM-concepts instead of being ‘pawns’ in a wider transition discourse.

At the level of the Transumo-program and the A15-project, the approach of ‘transitioning’ ongoing projects by starting up a transition trajectory ‘on the side’ with external actors, seemed to have a disempowering effect in that it took away the incentive for incumbent participants to strive for a more innovative and long-term perspective *within* the regular project. It suggested that the ‘regular participants’ were incompetent; rather than challenging them, a self-fulfilling prophecy occurred, in which they were given the impression that they were not innovative or risk-taking enough, and therefore they would

³⁵⁴ It should be mentioned that it was not just the transition terminology that seemed to have this disempowering effect. The ‘mainstream’ discourse on mobility, and freight transport specifically, has various ingredients that can be disempowering. The tendency of both academics and practitioners to frame transport issues in quantitative economic and technological terms is disempowering in projects that (mainly) address organization and governmental challenges (as was the case in these three projects). Participants felt they had to produce concrete, short-term, quantifiable results, preferably a new technology that business could profit from, while ideally ‘also’ more ‘environment friendly’. Although changing the mind-set throughout a sector or getting stakeholders committed to cooperate in public-private partnerships is just as hard as producing a profitable technology (if not harder), it tends to ‘count for less’. It seems that it was the specific *combination* of imposed transition terminology with the quantitative transport discourse that was especially disempowering.

also not act like it. In some Transumo projects, and to some extent also in the innovation program Sustainable Logistic, the ‘failed’ attempts to apply TM-concepts, and the judgment thereof by others, was disempowering up to the point of resignation. The Transumo’s theme-leader that resigned was known to be an especially enthusiastic and intrinsically motivated individual with a wide network of connections in the logistics sector. As far as he lacked competences, he himself was aware of it and requested support for the challenges he faced. This incident illustrates the risk of disempowering and ‘loosing’ individuals that (initially) have a high level of intrinsic motivation.

While transition management aims to empower ‘frontrunners’ and ‘niche-actors’, it also has some exclusive elements in terms of actor-selection. The literature states that: “participants in the transition arena need to have some basic competences at their disposal: they need to be able to think at a high level of abstraction (system thinking), be able to communicate abstract ideas and have leadership abilities” (Loorbach 2007: 140). The provided list of criteria includes networking skills, systems thinking, guts, ambition, abstract thinking, strategic thinking, creativity and imagination, problem structuring skills, general knowledge, a large network, vision, communication and negotiation skills, and so on (ibid). Individuals that meet these criteria are by definition already ‘empowered’. The idea is that by bringing them together in a so-called ‘arena’, they can further empower each other and then move on to empower others.

However, when ‘transitioning’ *ongoing* programs and projects, actor-selection has already taken place. Pointing out that these actors do not fulfil the criteria of the ideal ‘frontrunners’ as described in TM- literature can *disempower* incumbent participants. As we saw in one of the case-studies, the Transumo organization provided training workshops on transition management. In such workshops there is a thin line between motivating participants to improve and giving them the feeling they are incompetent. To complicate things further, this line is different for every individual. Some prefer direct constructive criticism to overly positive motivational discourse. Instead of ‘one-size-fits all’ trainings, the focus could be on individual training, and practical advice on how to deal with context-specific dilemmas that come up within projects. Moreover, it may be more effective to focus on the competences that incumbent participants do have, rather than on the competences they lack. As pointed out in the empowerment literature: people “already possess a great deal of power – power that resides in their knowledge, experience, and internal motivation”, and they must just “acquire the skills and desire to use the power they [already] possess” (Randolph 2000: 95-99). Furthermore, empowerment research stresses the importance of understanding *why* people are not being the innovative, risk-taking, and long-term oriented individuals that others want them to be. This is not necessarily because they are not committed to societal goals, incapable of creative thinking or lacking some personality traits. It may be that they simply have a history of working with risk-avoidance, compliance and short-term success. The literature on empowerment emphasizes that most managers and change professionals fail to understand that empowerment requires a long-lasting exposure to a ‘safe’ environment in which people are encouraged and allowed to work on the basis of intrinsic motivation. Therein it is important to not ‘fall back’ into command-and-control thinking or use management techniques that reinforce extrinsic motivation. However, in

the three case-studies, the time-consuming formal procedures imposed extrinsic motivation and distracted participants from focusing on intrinsically motivated tasks.

One suggestion to deal with this would be to reconsider the subsidy-regulations designed by the government, and to avoid that a long-term policy ambition such as 'a transition to sustainability' is operationalized through projects and programs that are 'stuck' in a hierarchical and bureaucratic construct. There is also something that can be done at the level of programs and projects, i.e. to deal with the given imposed formal procedures in a more 'creative' manner. Empowered individuals "ask for forgiveness rather than permission" (Quinn and Spreitzer 1997:38). Not only can this idea be applied to the subsidy-regulations, but programs and projects can also use it to deal with these given procedures: instead of having participants formally ask for 'permission' to start or continue a program or project activity, the focus could be shifted to a more informal form of retrospective accountability (e.g. presentations instead of formal reports, involving entire team-responsibility instead of individual responsibility by managers only).

Although the projects and programs under study did involve some aspects of an empowerment culture, many aspects of a hierarchical culture (see chapter 3, section 3.3.2) were heavily present within and around the projects and programs under study. Projects were focused on planning rather than visioning, there was a focus on individual responsiveness (mostly by managers) rather than team responsibility by all participants, there was an explicit 'pyramid' structure (boards, steering groups, management teams etc), control and monitoring was mostly based on top-down standards rather than self-monitoring, and managers often complied with program formalities and stakeholders interests instead of making own judgments. Such hierarchical and formal structures – both at the program- and project-level – created an atmosphere of control, distrust, risk-avoidance, and compliance, which is in direct opposition to foster intrinsic motivation. The program-managers and project-leaders in the case-studies had to deal with steering groups, stakeholders, subsidizers, and other project-participants, and on top of that with governmental formalities. Not only did stakeholder-interests sometimes conflict within the projects themselves, they also conflicted with program goals and expectations. To complicate things further, the programs Transumo and Sustainable Logistics were also under scrutiny of supervisory bodies, and its board members, directors, and advisors also had differing opinions on the degree to which long-term transition ambitions and 'sustainability' should be aspired, and the extent to which transition management should be applied. Looking at this organizational whole, we see a hierarchical complex in which managers received conflicting messages and were primarily preoccupied with keeping everyone above, under, and next to them satisfied, living in a continuous fear that subsidies might be removed. As a result, they worked on the basis of extrinsic motivation, and it is thus not surprising that they lacked the intrinsic motivation to apply transition management and/or transform ongoing program and project activities.

TM-literature emphasizes that "the traditional policy-making paradigm of developing plans, strategies and implementing these in a rather straightforward manner has to be replaced by a more holistic, refined and integrated perspective" (Loorbach, 2007: 53). Moving away from the planning paradigm and its hierarchical structures is, however,

anything but easy. The literature frequently emphasizes that any tendency to institutionalize or control a TM-process should be avoided, as it removes its innovative potential. However, when ‘transitioning’ ongoing programs and projects, such hierarchical structures are already in place. In that context the risk is that managers attempt to apply TM through the enforcement of external commitments, thereby (willingly or unwillingly) hampering intrinsic motivation. As one critical observer once asked: “are we transitioning programs or programming transitions?”³⁵⁵ There are two different questions to be asked in this regard: 1) to what extent can TM be applied in a hierarchical, bureaucratic context and, 2) to what extent should TM itself strive for institutionalization and formalization?

TM-processes occur within a system that has certain power structures. According to critical theorists (see chapter 3, section 3.3.3), it is questionable to what extent power relations can be substantially altered at the interpersonal level of a ‘transition project’. In this respect, empowerment literature is helpful to stress that it is not about a manager ‘giving’ niche-actors more power or ‘taking it away’ from regime-actors. The manager does not need to choose sides or ‘speak on behalf’ of anyone. Rather, it is about creating a setting in which niche-actors can empower themselves, by being allowed to speak their minds and openly disagree with regime-actors. In this regard the ‘niche-regime discourse’, as found in TM-literature, has an empowering potential that has not been exploited in the cases under study. Rather than using regime-niche discourse as something to *oppose* regime-players, it can be used to actually *engage* with regime-players in a different way. These players can be approached as ‘enlightened regime-players’ or ‘niche-players within the regime’: individuals that operate within regime structures, but have the will and courage to change these regime structures. Rather than confirming their regime-characteristics or labeling them as opponents of innovation, they are welcomed as crucial partners to realize ‘the transition’. Such attitude towards regime-players can have empowering effects, as it creates a sense of liberation from the regime-structures they are daily confronted with. Playing the role of ‘enlightened regime player’ in an innovation project can increase a sense of impact, meaning, and choice. Of course, empowerment is not reached by just sticking the label of ‘enlightened regime players’ on to people, nor by simply allowing individuals to ‘participate’ in a transition project.

Perhaps the most important lesson from empowerment literature is how and why ‘participation’ is not enough. Although ‘participation’ has often been equated to empowerment, both in terms of practical implementation and conceptualization, organizational psychologists argue that this equation is wrong because participation is only *one* aspect of empowerment (Conger & Kanungo 1988, Thomas & Velthouse 1990). They argue that ‘participation’ is mainly focused on providing a sense of ‘choice’, and that participatory management techniques often fail because they lack the other positive task assessments that are necessary for intrinsic motivation: a sense of meaning, competence, and impact. The extent to which individuals gain a sense of meaning, competence, and impact, depends on their interpretative styles; how they *attribute* causal relations related to their actions, how they *evaluate* them based on certain standards of success and

³⁵⁵ Fieldnotes: meeting on TM in Transumo => specify date

failure, and how they *envision* the future in terms of visualizing or anticipating what could happen (Thomas & Velthouse 1990: 675-676). While TM-instruments are generally described as ‘participatory techniques’, insights on intrinsic motivation help to specify those elements of TM that move beyond mere participation. There are several TM-tools that facilitate interpretative processes that can foster intrinsic motivation, such as long-term transition scenarios (‘envisioning future events’), integrated system analysis, problem-structuring and mid-term back-casting (‘attributing cause and effect’), and experimentation and learning rather than producing short-term results (‘evaluating success and failure’). These instruments can be used by individuals to position their own actions within larger societal developments. Instead of labelling company representatives as ‘only caring about the short term’ (as some practitioners in the programs and projects under study did), they can be positioned as individuals that can contribute to long-term societal improvement, and challenged to do so.

Besides the role that ‘process-facilitators’ can play by using these instruments in project meetings, critical theorists emphasize that power is a self-developing capacity and that empowerment has to come ‘from within’. In this respect researchers or process-advisors can only ‘state’ that managers and participant *can* exercise power, if they choose to do so. For instance, Transumo financed 50% of its projects through government subsidies, which are officially designed to serve long-term sustainability goals. If powerful business stakeholders want to insist on applied research results for short-term profit purposes, they can hire consultants to do so, rather than participating in a Transumo-project. Stakeholders can be reminded of this when necessary and Transumo managers *had a position to do so, but did not seem to use this power*.

This also relates to the (lacking) involvement of ‘radical’ niche-actors and civil society. As described previously, the projects and programs under study primarily featured business, science, and government, while the weaker segments of society, who can be said to suffer the most from ‘unsustainability’, were not involved. This also had disempowering effects on the participants that were involved in project and program. Although this may sound paradoxical (as they were empowered by being involved), this paradox occurred as participants started feeling that their project was not ‘making a difference’. It was striking to notice the cynical tone in which participants spoke of notions such as ‘sustainable mobility’ and ‘transition’. Even though the importance of these notions was underlined and confirmed all around in policy documents, program-ambitions and large bags of subsidy money, many participants failed to see how all these investments actually helped to improve society, thus decreasing a sense of impact and meaning. From an empowerment perspective, the suggestion would be to make sure that civil society is explicitly involved. It would not hurt programs and projects like the ones under study to actually involve some ‘victims’ of unsustainable transport that belong to ‘civil society’ (e.g. low income inhabitants of the A15-region that suffer from air pollution). Besides moral grounds and the issue of democracy, the direct confrontation with grassroots problems also has a purely instrumental benefit, as it empowers participants by emphasizing that their project is ‘making a difference’ for actual people.

8.1.4. Action research insights & lessons on TM

In the case-studies and intermezzos, I extensively discussed my involvement in the programs and projects under study. Therein I experienced several challenges regarding transition management; how to introduce it, how to apply it, and how to deal with resistance and skepticism. To a large extent these struggles had to do with factors which have nothing to do with the TM-model (e.g. inexperience and naivety). However, there were also several struggles that did come forth from (my previous interpretation of) TM. In this subsection I focus on discussing the latter, and distilling some lessons.

In a previous section I described the dichotomous associations with transition management. While TM theoretically stands for an integrated perspective, in the projects and programs under study it was brought in to *counterbalance* the prevailing short-term, economic focus. Therefore the TM-approach was equated to ‘choosing sides’ in favour of participants prioritizing environmental aspects and long-term goals, and ‘against’ those concerned about economic aspects. Even though I, as an action researcher, emphasized on numerous occasions that TM was about an integrative perspective (in presentations, writings, and conversations), these associations remained. Retrospectively, I argue that rather than trying to explain the entire TM-philosophy, I should have tried to provide and apply participative techniques to make participants *experience* this integrative perspective of transition management.

This also relates to the problem that in all case-studies, I invested a large amount of time and energy in arguing for a full-fledged TM-process. In the A15-project, I ended up offering ‘three options’ for applying TM. Because it seemed impossible to transform the project into a full-fledged TM-process, I proposed the option of organizing a ‘parallel-trajectory’ with a different group of actors. In a way, I tried to create a ‘niche’ in the ongoing project, and to apply TM-ideas as far as possible. In this parallel trajectory, we did manage to get time and budget to organize the trajectory, and to involve an interesting group of actors that qualified as frontrunners and ‘enlightened regime-players’, at least more so than the participants in the regular A15-project. However, this parallel trajectory ended up as a rather marginal ‘innovation impulse’ that had relatively little influence on the regular trajectory. Retrospectively, I believe it might have been more effective to try and use (small) TM-ideas and techniques within the ‘regular trajectory’.

In the Sustainable Logistics program, the theme of transition management was categorized under the subproject ‘agenda-setting’. In contrast to the A15-project, this was not a side-activity; on the contrary, it was brought in at a strategic level, related to the agenda-setting of the program, and taken up enthusiastically by one of the most experienced project-leaders, who integrated TM-ideas in his agenda-setting proposals. However, this was also a disadvantage, because the plans had to be approved by the steering board and commissioning authorities, who believed TM to be too ambitious, vague, long-term, and risky, while they wanted more concrete, short-term, and sure results. As a result, TM was in the end not applied at all, and the ‘agenda-setting’ project fell apart in several ‘strategic projects’. Retrospectively, I believe it might have been better to position TM as an approach to *integrate* the various subprojects of the program,

and to provide concrete techniques to organize program activities. For instance, when at the beginning of the program, a ‘roundtable’ was organized with several important individuals from the freight transport sector, I should have proposed concrete TM-techniques to be used in this round table event, even though the round table was entirely different from an ideal ‘transition arena’.

The problem, however, was that at that time TM did not (yet) provide participatory techniques that could be applied in an ad hoc matter outside a full-fledged transition arena process (see section 8.1.1.). As a result, in the projects and programs under study, participants choose for other participative techniques that were simpler, and more readily available. For instance, in the ‘innovation impulse trajectory’ for the A15-project, we tried to translate some of the TM-ideas into simplified tools to involve practitioners in thinking about sustainability transitions (considering the limited time available for this process). One of these tools concerned the so called ‘Time-line Exercise’³⁵⁶. On the wall we placed a huge red arrow symbolizing a period of 50 years (2007–2057). Participants were asked to describe three visions on transport in the A15-region: a vision of the current situation, a desirable future vision for the long-term, and a ‘turning point’ that would enable a transition from the current situation to a desirable future vision. Simplistic as this exercise may sound, it did provide an overview of the different ideas participants had about long-term process of change, and it enabled us action researchers to compare and analyze the different future visions and turning points that participants envisioned (see figure below).

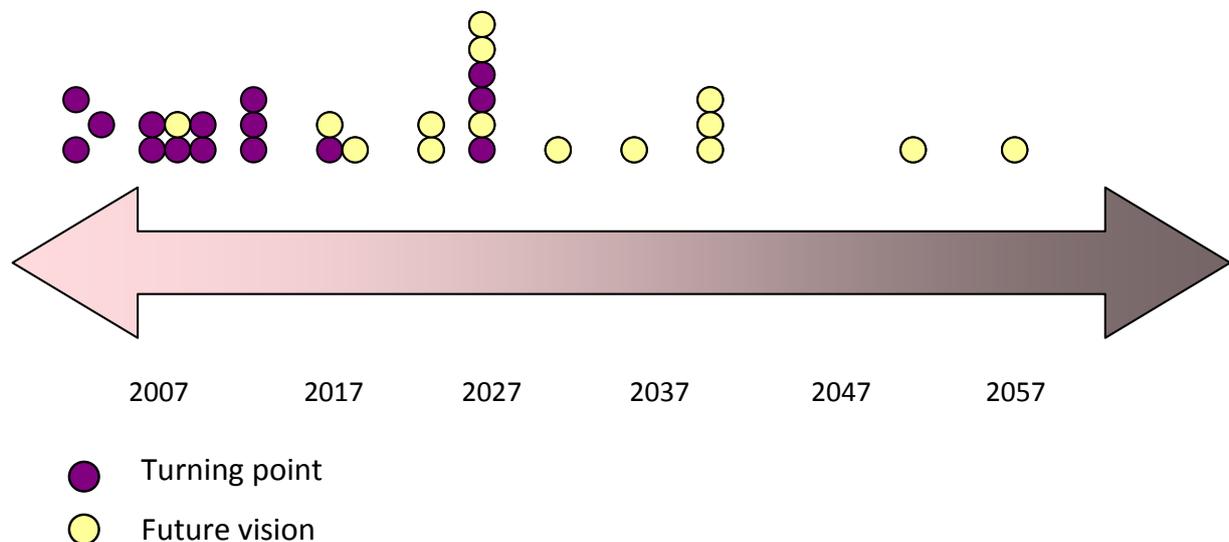


Figure 20. Timeline exercise (source: Avelino and Bressers 2008)

In that same meeting, we applied another participatory technique called ‘Dancing through the Scales’³⁵⁷. Participants were split up in groups and assigned to make up a plan to realize a transition to a sustainable A15 region, one group was asked to do so at the local level, one at the regional/national level, and the other at the international level. At the

³⁵⁶ Developed by Henk Diepenmaat, project-leader of Transumo’s ‘transition trajectory’

³⁵⁷ Developed by Frans Soeterbroek, process facilitator hired by the A15-project

end of the session the groups were asked to present their proposal to a potential commissioning authority, in a role playing setting. Together, these proposals – which were formulated in one afternoon – drew a future vision of the A15-region that was more innovative than most of the other proposals developed in the regular A15-project over the years (as confirmed by several participants– see chapter 5).

These participatory techniques as described above tend to be considered ‘simplistic’ from a TM perspective, because they are not part of a broader, strategic process. In fact, the process managers that developed these techniques, on several occasions had conflicts with transition management experts about this issue. I myself decided not to analyze these techniques in my case-studies because they were not ‘really a case of transition management’. Retrospectively, I argue that this is a missed opportunity; rather than rendering these tools as ‘simplistic’ it would be more constructive to explore how they can be used (and possibly adapted or extended), to make participants *experience* some smaller aspects of a transition management process, e.g. linking the long-term to the short-term, thinking out of the box, designing and presenting innovative and ambitious proposals, and considering these at multiple levels (local, regional, international).

Another action research experience has been described in the Intermezzo on the *South Wing Region*. Therein I described how, together with a student intern working at DRIFT, we used a critical socio-spatial analysis of the mobility system to instigate debate within the South Wing transition arena. Based on this critical analysis we also developed socio-spatial sustainability principles for the mobility system (see Intermezzo B, section B.2.5). We used those socio-spatial principles for debates on sustainable mobility, and also to evaluate the projects of Transumo (one of the partners in the South Wing transition arena). As I described in the intermezzo, the critical analysis of the mobility system and the socio-spatial mobility cascade triggered passionate reactions amongst the participants, both positive and negative, but overall positive in terms of instigating fundamental debate on sustainability. However, unfortunately, this analysis and cascade was only developed at the end of the project, and only used in its final meeting and concluding report.

Retrospectively, I wish that the critical analysis and provocative principles had been used earlier in the South Wing transition arena, to see whether it would have helped to *counter-balance* and ‘break open’ engrained practices and prevailing doctrines on mobility and spatial planning. The main insight that I gained from this experience, was to see the powerful role of a critical, normative, and provocative *substantive* analysis in a transition arena process. I believe that if this provocative and critical analysis of socio-spatial problems with the car dominated mobility system would have been available as input for the transition arena at an earlier stage, it would have triggered more fundamental and cutting edge debate amongst the participants, and that this in turn would have increased the motivation and commitment of participants to develop an alternative vision on mobility and spatial planning in the South Wing region, and to also carry out this vision to others, and to translate it in to action.

On that basis I would recommend such critical analysis – e.g. critical social theory in the tradition of Marxist theory – as a tool to be used by TM action researchers, to trigger fundamental sustainability debates on a specific sector or region. This can complement the ‘integrated system analysis’ currently used in TM. This also relates to my questioning of functionalist system boundaries. As discussed in chapter 7, I question the focus on functionalist subsystems in transition studies, especially when it is used for a transition management action research. Although the *scientific study* of functional subsystems does not necessarily promote policy-makers to focus on sustaining functionalist subsystems *in practice*, one can still reproduce and support the other.

In all the projects and programs under study, transition researchers were involved. Retrospectively, I argue that these transition researchers – including myself – could have (and should have) questioned the functionalist subsystem focus on which the projects and programs were based. This did not occur because this functionalist subsystem focus was also an explicit starting point for transition (management) discourse. Despite of the ambition of transition researchers to question and challenge practitioners’ engrained ideas and beliefs, we as transition (management) researchers reproduced one of the engrained paradigms that hamper sustainability; that of thinking in terms of functional subsystems and sector boundaries. In order to avoid this in the future, in order to better challenge engrained ways of thinking and to inspire new and integrated sustainability perspectives across sectors, I argue that transition studies is better served with a more actor-based, problem-oriented, and critical approach to sustainability and transition challenges.

Finally, I also argue that transition management action researchers should provide more concrete financial and legal suggestions on how to *enable* transformative ambitions. For instance, in the Sustainable Logistics program it was described (see chapter 6) how at some point an external advisor called upon the program manager to become independent of the ministry of Transport, by designing a business case that would enable the program to finance itself, rather than depending on government subsidy. As discussed previously, the financial and legal dependence on the ministry of Transport – and all the hierarchical and formalistic procedures that came with it – formed an impediment to many of the innovative ideas and proposals. The idea of becoming independent was enthusiastically discussed in an inspiring strategic session, but in the end this ambition was not realized. Retrospectively, I wish I had been able to play into this momentum of inspiration and daring ambition, by providing concrete suggestions on how to realize these ideas in financial, legal, and political terms, even if only by giving examples of best practices of other programs that had succeeded in doing this. The reality is that no such concrete suggestions or database of best practices was available to me. On that basis, I argue that transition (management) research should include legal and financial expertise, as well as a broad database of best practices of innovative projects and programs that have succeeded in using innovative legal and financial constructions to operate relatively independently of regime-actors (e.g. in the form of an association or cooperative).

8.2. POWER AND EMPOWERMENT PRINCIPLES FOR TRANSITION MANAGEMENT

In this section I use the empirical insights and lessons in the previous section, in combination with the theoretical insights presented in chapter 7, to formulate ‘power and empowerment’ principles for transition management. I conceptualize the ultimate purpose of TM as *empowering practitioners to achieve a transition ambition, by helping them to undertake initiatives that have the highest possible ‘transition potential’*. There are two distinct ways of doing that; 1) designing *new* processes with optimal transition potential (i.e. ‘full-fledged’ TM to initiate new projects and programs), or 2) increasing the transition potential of *ongoing* processes (i.e. ‘transitioning’ ongoing initiatives). Based on the empirical insights in the previous section I argue that the principles for *designing a new process* should be different from the principles for *adapting an ongoing process*.

8.2.1. Principle 1: on intrinsic motivation

When *designing a new process* with optimal transition potential, the challenge is to involve participants that already have a high level of intrinsic motivation to realize a sustainability transition, i.e. actors that are already empowered (sense of choice, meaning, competence, and impact, see chapter 3). The idea is that by bringing these individuals together in a transition arena process they can further empower each other – forming an ‘empowered niche-regime network’ – and then move on to empower others. However, when *adapting an ongoing process*, the challenge is to increase the intrinsic motivation of incumbent participants to realize a sustainability ambition. When incumbent participants seem to have a low level of intrinsic motivation, the solution is not to replace these individuals by other outsiders that seem more intrinsically motivated, for this might actually (further) lower the intrinsic motivation of incumbent participants, and it might fragment the ongoing process in separate groups.

8.2.2. Principle 2: on involving both radical and moderate actors

When *designing a new process*, actor-selection should be based on involving both radical and moderate actors, including actors from the public and private sector, as well civil society. Ideally, these different sectors are equally represented and have an equal say during the process. This involvement of civil society should also focus on the representation of actual citizens and grassroots initiatives, rather than only organizations that represent science or public-private interests (e.g. research institutes, trade-unions, or semi-governmental environmental organizations). When *transitioning an ongoing process*, actor-selection has already take place. If certain sectors are underrepresented or absent (often the case for civil society), the solution is not to insist on formally involving representatives of missing groups in the ongoing initiative. Because involving new actors later on in the process might merely disrupt, fragment, and decelerate the ongoing initiative, especially when facing resistance from incumbent participants. Rather, the challenge is to *connect* the ongoing process to other initiatives that do represent the missing group of actors. For instance, when a project is only focused on moderate actors, the challenge is to connect the project to other initiatives that do involve more radical actors. The other way around also applies, when a project is only focus on radical actors

(i.e. radical niches, radical niche-regimes, and/or members of social counter-movements), the challenge is to connect it to initiatives that involve more moderate actors (i.e. moderate niches, moderate niche-regimes, and/or 'regime-actors'). Or, when a project only involves government and business partners, and lacks civil society representatives, the challenge is to connect this project to another initiative that has the opposite problem (i.e. only civil society actors and lack of business and/or government partners).

8.2.3. Principle 3: on conditions of power

When *designing a new process*, the challenge is to ensure that the conditions of power are met, by selecting participants that already fulfill these conditions (access to resources, strategies, skills and willingness to exercise power), and/or participants that can complement one another in this regard (e.g. one participant has access to resources while another participant has necessary skills). The access to resources should not only be about mental and human resources (i.e. discursive power) or monetary resources (i.e. economic power), but also about physical resources (e.g. access to a piece of land or particular products). Similarly, required skills are not only about strategic thinking or networking skills, but also about necessary legal and financial expertise and skills to move the initiative forward beyond an envisioning stage.

When *adapting an ongoing process*, the challenge is primarily to focus on using the conditions of power that are already available. Although certain conditions may be lacking, the participants involved will always fulfill some conditions of power in some way or another, i.e. they will have access to some resources, strategies, skills, and willingness. Although in theory, one could also aim to create new conditions – e.g. provide training on certain missing skills or strategies, or involving new actors that do have the necessary access to resources – it might be more effective to invest that time and energy in making optimal use of the conditions of power that are already available amongst the incumbent participants.

8.2.4. Principle 4: on the exercise of power

When designing a new process, the challenge is to not only enable the *passive* exercise of power (e.g. developing ideas and visions), but to combine this with the *active* exercise of *innovative* and *transformative* power. Or in other words, the challenge is to create cooperation between *active niches* and *active niche-regimes* that do not only develop ideas on new resources and new institutions, but also *materialize* these new structures and institutions, and mobilize physical resources, without being dependent on regimes to do so. This relates back to the previous point about the conditions of power; the active exercise of innovative and transformative power requires access to monetary and physical resources, and legal and financial skills necessary to materialize new institutions.

When *adapting an ongoing process* – in which there may be no active exercise of innovative and transformative power – the challenge is to make optimal use of the power types that can be exercised. For instance, if the ongoing project or program qualifies primarily as a 'passive niche' or 'passive niche-regime', the challenge is to use this passive

innovative and transformative power to facilitate other niches and niche-regimes that can exercise active innovative and transformative power (rather than being absorbed by regimes that use the innovative and transformative ideas to exercise reinforcing power). When the ongoing project or program qualifies as a regime-actor – i.e. when it primarily exercises reinforcing power – the challenge is to use this reinforcing power to contribute to sustainability transitions, by facilitating niches and niche-regimes.

8.2.5. Principle 5: on power relations

The *design of a new process* should facilitate power relations of independence and cooperation, both internally and externally. That is, participants should be as independent as possible from each other – especially avoiding one-sided dependence – while cooperating for similar goals. The initiative should also be as independent as possible from other projects and programs, but meanwhile cooperate with other initiatives. This relates to the earlier point about fulfilling the conditions of power within the project to ensure that it can continue even if outside partners end their support, thereby ensuring continuity despite of political instability.

When *transitioning an ongoing process* – in which one-sided dependence and competition may prevail – the challenge is to increase independence and cooperation. It may be impossible to completely get rid of one-sided dependence and competition, but the challenge is to decrease it as much as possible. For instance, when a project depends on an unwilling outside commissioner to such extent that it cannot engage in activities that it wishes to engage in, strategies should be used to design a ‘back-up’ plan; what if the commissioner would withdraw (part of) its support, what alternative support could be sought to continue the project, or how could it be continued with less support? What business plan could enable the project to continue independently? This also relates to the need for legal and financial expertise within transition management, in order to be able to advise practitioners on how to deal with financial set-backs or conflicts with other actors that they are dependent on. This also applies to the individual level; if participants are afraid of ‘losing their job’ (thus stifling risk-taking), they need to be coached in envisioning alternative jobs and career paths.

8.2.6. Principle 6: on power dynamics

In the *design of a new process*, the challenge is to ensure a balance between antagonistic and synergetic power dynamics. While seeking synergy with other groups of actors is necessary to strengthen and enable one’s exercise of power, antagonism is also necessary to resist exercises of power that one disagrees with. Synergetic power dynamics should be a matter of choice, not of obligation; participant should enable and support other projects because they intrinsically want to, not merely because they depend on those other projects. The possibility of antagonistic power dynamics depends on the earlier points on involving *both radical and moderate* actors, *conditions of power*, *active* exercise of power, and *independence*. When a project is entirely dependent on outside actors to physically materialize its innovative ideas and proposals, (i.e. when it lacks access to physical resources or access to financial and legal skills to realize new institutions), it becomes

dependent on synergetic power dynamics with regime actors, and will avoid antagonistic power dynamics with the regime.

When *transitioning an ongoing process* in which power dynamics are one-sided – either too much synergy or too much antagonism – the object is to *counter-balance* this power dynamic. When an ongoing project is solely antagonistic to the outside world, one should guide the search for possible synergies: which other initiatives strive for the same goals and how could they enable the project, and *visa versa*? When an ongoing project is solely synergetic with outside initiatives, even those who hamper the project or strive for contrary goals, one should aim to make room for antagonistic power dynamics, even if only in the discursive sense. This is primarily a matter of instigating critical debate and asking the following questions; what are the goals and methods of those other initiatives that one is facilitating, and if they are contrary to the goals of the project, do the participants really want to continue facilitating them? Enabling such critical debate relates back to the earlier issue of (in)dependence. If participants are ‘afraid’ of open antagonistic discourse with outside actors, one can propose to at least have this critical debate internally. On the basis of such internal critical debate and awareness, strategies can be sought on how to decrease synergetic dependencies; even when avoiding pro-active antagonistic resistance, one can still opt for quiet resistance or passive antagonism.

8.2.7. Principle 7: on organizational setting: empowerment vs. hierarchical structures

When *designing a new process*, the organizational structure of the project or program should be based on a culture of empowerment. Referring to Randolph’s table on the distinction between ‘hierarchical culture’ and ‘empowerment culture’ (see chapter 3, section 3.3.2), one should strive for the basic ingredients of an empowerment culture, and avoid those belonging to a hierarchical culture (e.g. self-monitoring rather than outside monitoring, team-leaders rather than ‘managers’, cross-functional working groups rather than pyramid structures, etc.). As also described in the TM-literature, one should avoid hierarchical phenomena such as steering boards, formalized bureaucracy, advisory committees, and separate management teams. However, one should also provide *alternative* methods to ensure accountability, reliability, and monitoring. Possible methods include; retrospective accountability rather than having to ask *ex ante* formal permission for project activities, oral presentations to present results in stead of formalized reports, team-responsibility instead of individual responsiveness by managers only, self-monitoring by participants, and consensus voting to decide on continuation of activities, rather top-down go/no go decisions by external boards, etc.

When *transitioning an ongoing process*, the challenge is to work with or ‘around’ the hierarchical structures that are already in place. Participants and managers should be coached to deal with hierarchical structures (i.e. steering boards and or formalistic accounting obligations) in a creative and efficient way, by involving and challenging members of the steering board in an innovative ambition, and/or by proposing alternative accountability methods. This requires relatively risk-taking and fearless individuals, which relates back to the issue of (in)dependence and having a ‘back-up strategy’, i.e. a vision of what to do when things go wrong (when hierarchical structures remain rigid and ‘punish’

deviant behaviour, possibly leading to individuals losing their job). When the participants and managers in an ongoing process remain incapable and unwilling to engage in such risk-taking behaviour – despite of coaching, and despite of examples of best practices in which such risk-taking behaviour paid off – then there is no choice but to work within the hierarchical structures. Moreover, one should avoid that the TM-ideas of a ‘strategic transition arena’ vs. ‘operational transition experiments’ gets (mis)used to *confirm* hierarchical tendencies, such as to vertically split up an initiative in a strategic group that ‘takes decisions’, versus an operational group that ‘does the work’.

8.2.8. Principle 7: on sustainability visions and systemic power

When *designing a new process*, one should ensure that the project develops a broad, cross-sectoral vision on sustainability, including an explicit discussion and positioning towards landscape developments. Related to that, sector boundaries (mobility, energy, etc.) should be questioned and reconsidered rather than confirmed. If possible, the project should be based on a particular regional/geographic sustainability challenge, as this facilitates a cross-sectoral view. In this regional sustainability ambition, one should make sure to also look beyond regional boundaries, and landscape developments should not be merely taken as ‘given dominant trends’ that are imposed on to a specific region. Rather, landscape developments should be questioned and debated, acknowledging the existence of counter-movements that deviate from dominant trends. A project has ultimate transition potential when it contributes to the reshaping of the landscape, i.e. when it contributes to the collective systemic power of social counter-movements that challenge dominant landscape trends.

When *adapting an ongoing process* that does not have a cross-sectoral vision on sustainability, the challenge is to broaden one-sided visions of sustainability (or to create a sustainability vision in the first place, if there is no sustainability vision at all). If the mission and scope have already been decided upon, and if it is impossible to change this (e.g. if the ongoing project is supposed to focus solely on CO₂-emissions in the transport sector), one can bring in alternative perspectives to look at this predetermined scope and to trigger critical debate (e.g. a socio-spatial perspective on mobility problems). Moreover, one can bring the ongoing project in contact with other initiatives that have different perspectives on similar issues. Rather than contesting the focus of the ongoing initiative, and rather than trying to broaden the mission of the project itself, one can challenge participants to identify how its own scope and ambition fits within broader sustainability debates and ambitions. Even though the initiative might not have the direct ambition to reshape landscape developments or to be part of a social counter-movement, it can still identify its place in relation to those broader societal dynamics. This in turn can help empower participants in terms of increasing their sense of meaning and impact.

8.2.9. Principle 9: on power as a substantive sustainability issue

In the *design of a new process* one should ensure that the theme of ‘power’ is not merely taken as a process issue (i.e. ‘how can we exercise power to attain our goal?’) but that it is also considered as a substantive sustainability issue. The ‘people’ in the people-planet-

profit criterion for an integrated sustainability vision, should include sustainable power relations as a necessary element. While it may be open to participatory debate *what* sustainable power relations are supposed to be exactly in a given context, it should be a predetermined requirement that sustainable power relations are explicitly considered in the envisioning process. This includes critical debate on whether and how the project wants to enable and facilitate sustainable power relations both now and in the future. This means that in debates about a sustainable future, the social dimension should not only be about how to ‘organize’ a balance between economic concerns and ecological thresholds, but also about how to avoid the breaching of social threshold by exerting too much centralized power, and how to ensure power relations that are based on intrinsic motivation (see discussion on sustainable power relations in chapter 7, section 7.6.).

When *transitioning an ongoing process*, the challenge is to trigger a debate on (un)sustainable power relations, and to critically ask whether the project is not (willingly or unwillingly) contributing to unsustainable power relations in the future (e.g. by proposing policies and top down institutions that reinforce extrinsic motivation and run the risk of breaching social thresholds). Many passive niches and niche-regimes – often projects focused on research and development of databases, computer models, or standardized techniques – are unaware and/or uncritical of how their offered tools may be (mis)used by regimes in the active exercise of reinforcing power, and how this may lead to the (re)production of unsustainable power relations. Triggering awareness and debate on this issue should be part of a transitioning process.

8.2.10. Principle 10: on the ethics of power

Last but not least, when *designing a new process* with optimal transition potential, one should strive to develop a context-specific perspective on the ethics of power exercise. Similarly to the issue of sustainable power relations, the question of whether and to what extent the exercise of power is justified in a given context may be open to participatory debate, but it should be a requirement that ethical concerns are reflected upon. While participants may disagree on which ethical perspective they prefer, the point is to become conscious of which ethical perspectives there are and which ones they choose in their TM-activities. Ideally, such ethical debate is an explicit and separate participatory exercise in the TM-process.

When *adapting ongoing processes*, it is a matter of triggering critical debate on the ethical consequences of the power exercised by participants. While it may be impossible to invest an elaborate amount of time on an ethical participatory exercise, it is still possible to ask critical questions on the ethical consequences of the initiatives. As identified earlier many projects and programs are unaware and/or uncritical of how their project results may be (mis)used by others. Even if participants are aware of such ethical concerns, they are often insecure about how to deal with such ethical dilemmas. This in turn decreases intrinsic motivation to exercise power. As such, dealing with ethical issues is not merely a normative issue but also a purely instrumental one, to empower participants in their belief that they can exercise power to realize sustainability transitions, and that they can do so in an ethical and justified manner.

Themes	TM Principles for Designing New Processes	TM Principles for Adapting Ongoing Processes
Intrinsic Motivation	Involve participants with intrinsic motivation to realize a transition	Increase intrinsic motivation of incumbent participants
Power diversity	Involve both moderate and radical actors	Link incumbent participants to other groups of actors (moderate& radical)
Conditions of power	Ensure that the conditions of power are met	Focus on using the conditions of power that are already available
Exercise of Power	Enable both passive and active exercise of innovative and transformative power	Focus on making optimal use of the types of power exercise that are available
Power Relations	Ensure power relations of independence and cooperation	Increase independence and cooperation
Power Dynamics	Ensure a balance between antagonistic and synergetic power dynamics	Counterbalance dominant power dynamics by linking moderate to radical groups
Organizational Setting	Create an empowering setting and avoid hierarchical structures	Work within and around existing hierarchical structures
Systemic Power => sustainability vision	Ensure a broad vision on sustainability	Broaden one-sided visions on sustainability
Power as a substantive issue	Treat sustainable power relations as a substantive issue	Trigger debate on (un)sustainable power relations
Ethics of Power	Develop context-specific perspective on ethics of power	Trigger debate on the ethical consequences of power exercise

Table 18. Power and empowerment principles for transition management

8.3. POWER AND EMPOWERMENT TOOLS FOR TRANSITION MANAGEMENT

This section aims to operationalize the power and empowerment principles described in the previous section, by presenting a participatory ‘power tool’ and ‘empowerment tool’, and discussing how these tools can be used in different phases of the TM-cycle. Obviously, the principles cannot be put into practice simply through a brilliant process design predetermined by transition managers. Instead, the challenge is to involve participants in the ambition to apply these principles. As such, the ‘power tool’ and ‘empowerment tool’ are explicitly participatory, to be used and applied together with participants. The tools can be used for both a ‘full-fledged’ TM-process as well as for ‘transitioning’ ongoing initiatives. Moreover, the tools are not confined to TM, but could be used more generally by action researchers and practitioners who want to specify and improve power and empowerment processes within initiatives that have transformative sustainability ambitions.

8.3.1. A power tool: mapping out power-in-transition

The power tool is based on the same concepts as the analytical power-in-transition framework presented in chapter 7. The main difference is that the ‘tool’ is not used for empirical research, but rather for a participatory process, to help practitioners evaluate and improve their own ‘power-in-transition’. The tool includes several elements, which I

describe by using the metaphor of a map: 1) designing a power-in-transition map, 2) positioning oneself in the map, 3) developing a strategy to 'navigate' through the map, and 4) ethically justifying the power navigation strategy. While I describe these elements as four consecutive and separate 'steps', in practice they do not need to be: different elements can be used simultaneously, in parallel or even independently from one another. I will describe the map in terms of 'our' map, 'us' and 'we', as if hypothetically belonging to a group of practitioners that is applying this tool. After presenting the tool I specify how the tool can be used in the TM-cycle, and how it relates to other TM-tools.

Step 1. Designing our own Power-in-Transition Map

The first challenge is for us to map out the power field in which we operate. We can use the multi-level power-in-transition picture (see figure 17, chapter 7, section 7.2.3) as a basic schematic overview, aiming to 'fill in' and 'color' this picture for our own field, thereby designing our own specific power map. The first question is: what are the dominant trends at the landscape level relevant to our ambition, and what are the undercurrent counter-movements that challenge these dominant trends? Secondly, what are the most important initiatives and organizations in our field, how can these be positioned towards these landscape trends, (i.e. are they 'radical' or 'moderate'), and what kind of power do they exercise (i.e. are they regimes, niche-regimes, or niches, or combination thereof)? If we find that our initial list of relevant initiatives only includes one particular type of group (e.g. regimes or moderate niche-regimes), what other complementary examples can we think of or look for (e.g. radical niches)?

Step 2. Positioning ourselves in the Power-in-Transition Map

The next challenge is for us to position ourselves in the power map. Who and what *are* we, what it is that we *want* to be? First, are we radical or moderate, i.e. do we want our initiative to play into dominant trends, or more into undercurrent counter-movements? This requires us to have a discussion about landscape developments, related to our desired sustainability vision. This also includes a debate on sustainable power relations. Which power relations are implied by our sustainability vision, and how does this relate to current trends? Second, how *can* we exercise power, and what kind of power do we *want* to exercise? Do we want to develop new resources (niche/innovative power), do we want to develop new institutions (niche-regime/transformational power), or do we want to strengthen and reproduce existing institutions and paradigms (regime/ reinforcing power)?

Third, do we want to focus (only) on the passive exercise of power (e.g. mobilizing ideas, plan, visions, conceptual tools), or do we (also) want to exercise power in an active way, i.e. mobilize physical resources to materialize our ideas and visions? This discussion may partly depend on what we think our field 'needs' the most. For instance, if we believe that there are already enough radical groups of actors exercising passive power, we might choose to focus ourselves on more moderate, active power exercise; materializing ideas and visions in synergy with the regime. Based on this we can also discuss which other initiatives we aim to cooperate with (see next step).

Step 3. Developing our Strategy to Navigate through our Power Map

We now have a collective power map of our field, sector or region, and we have discussed how we wish to position ourselves therein. Based on this collective map, we can start developing a power strategy on how to ‘navigate’ through this map in order to achieve our sustainability ambitions. We do this by discussing possible answers to the following questions (see table below):

Power Exercise
<ul style="list-style-type: none"> • Which types of power exercises are necessary to attain our goal? • Which types of power can we (not) exercise? • Is the power that we can or want to exercise really ‘enough’?
Resources and Conditions of Power
<ul style="list-style-type: none"> • Which resources do we need and which resources can we (not) mobilize? • Which necessary skills do we need and which do we (not) have?
Power Relations & Power Dynamics
<ul style="list-style-type: none"> • Which other (groups of) actors do we need to complement us? • Which other (groups of) actors do want to enable or resist, cooperate or compete with? • What kind of dependence relations do we want or need with other groups of actors? • How do we ensure our independence?

Table 19. Participatory questions for developing a power strategy

The answers to these questions are context-specific and based on our particular ambition and position. However, if our goal is to contribute to sustainability transitions, and if we thus want our initiative to have optimal transition potential, we may use some insights from transition studies, such as the hypotheses on power-in-transition and the power principles underlying transition management. For instance, one hypothesis is that our transition potential is served by using the collective, systemic power of social counter-movements, i.e. the collective capacity of actors to challenge dominant landscape trends. Even if we ourselves do not wish to pro-actively partake in such counter movements, it is still relevant for us to cooperate with, or at least take account of, these movements, and to consider their impact on our field.

Step 4. Ethically Justifying our Power Strategy

When trying to apply our power strategy in practice, it is our duty to critically reflect on our power exercise, not only before we apply it, but also during and after. How can our exercise of power be ethically justified? Which ethical perspective do we uphold and how does this relate to our ambitions, relations, and power deeds? How do we treat each other when exercising power, and how do we treat other actors that don’t ‘belong’ to ‘our group’? As a guideline we can make use of the ethical principles on power in sustainability transitions (see chapter 7, section 7.4.). Depending on how much time we want to spend on such ethical discussions, we can potentially start by considering different ethical perspectives on the exercise of power:

- Power is justified through its *ends* (consequentialist ethics)
- Power is justified through the *person* exercising it (virtue ethics)
- Power is justified through the *way* in which it is exercised (deontological ethics)

We discuss which ethical perspective we prefer, and how we may differ in this regard. Then we discuss whether there are ethical principles that we can agree on, such as:

4. The exercise of power should serve desirable goals
5. Power should never be a goal in itself
6. People should always be treated as ends and never only as means

While we ideally strive to uphold all principles that we agree on, in practice there might be certain trade-offs between principles when we are trying to achieve our goals. In that case we discuss what these trade-offs are, and whether we can agree that some principles are leading over others. We can also specify the ethical principles by formulating them in relation to our sustainability transition ambition, such as (for instance):

4. The exercise of power to enable transitions should serve sustainability
5. Both transitions and power should not be goals in themselves
6. We should strive for sustainable power relations, both now and in the future

8.3.2. Using the power tool in the TM-Cycle

The power tool as presented in the previous subsection can complement the other ‘instruments’ described in the prescriptive transition management model (see chapter 3, section 3.1.3.). This can be done in terms of using it as a guideline for transition managers to design and organize a TM-process (e.g. actor selection, preparing and mediating transition arena meetings), but it can also be used as a participatory technique to be used together with participants. Rather than only relying on the prescriptive power and empowerment principles (as specified in section 8.2), the power tool helps to systematically discuss and specify how and to what extent these principles apply to a particular TM-initiative. I now shortly specify how the power tool can be used in the four phases as distinguished in the TM-cycle (see chapter 3, section 3.1.3).

1. Using the power tool in the arena preparation phase

In the arena preparation phase, the power tool can be used to complement ‘problem structuring’ and ‘organization of a multi-actor network’. Most importantly, this involves designing a power-in-transition map for a particular subsystem (sector or region). While this designing needs to be done together with the participants, I argue that the initiators of a TM-process should strive to design a preliminary power-in-transition map (possibly together with the commissioning authority), so that they can use this for actor-selection, e.g. to ensure that both radical and moderate actors are involved in the arena. For in order to know which actors qualify as ‘radical’ or ‘moderate’ (or both), it is necessary to

already have an idea of 1) which dominant landscape trends and counter-movements are relevant for a specific subsystem and transition challenge, and 2) how different actors actor groups position themselves towards these landscape trends. Or in other words, I argue that the initiator of a TM-process should have insight into the 'power field', before being able to set up an arena with transition potential.

Once arena members have been selected, the power tool can be used as a participatory technique in transition arena meetings. This involves the first two 'steps' of the power tool: 1) designing a power-in-transition map together with arena-members, and 2) positioning the arena within this power map. This relates to the 'problem structuring phase' and 'integrated system analysis', which unravel what the 'persistent unsustainability problems' and 'transition challenges' are in the subsystem. In addition to methods currently used for that purpose – such as the SCENE-model (Loorbach 2007, Grosskurth & Rotmans 2005) – the power tool can be used to discuss social unsustainability problems in more explicit power terms. In this phase, this is about treating power as a *substantive* issue, i.e. discussing (un)sustainable power relations as an explicit element of persistent unsustainability problems, in relation to dominant landscape trends, and under-current counter-movements. Designing the power map together with arena-members is also about considering other initiatives and networks that are dealing with similar issues (i.e. to map out the power field in which the arena operates). Subsequently, the most important challenge is for arena-members to *position* 'their arena' within this power map, i.e. to decide how they position themselves towards dominant trends and counter-trends, and how 'radical' or 'moderate' they want their arena to be.

2. Using the power tool for transition scenarios and transition agendas

The third step of the power tool – developing a power strategy to achieve a transition ambition – can be used to complement methods currently used to develop transition agendas and transition scenarios (Sondeijker 2009, Loorbach 2007). In this phase, it is also about discussing power as a *process* issue, by deciding which resources one needs to mobilize, which types of power one needs to exercise, which skills one needs (and/or lacks) to do this, how one needs to cooperate or compete with other organizations and networks, how to keep independence, and so on (see questions specified in section 8.3.1.). Rather than deciding on these issues through a static 'either-or-logic', one can combine this with a transition scenario exercise in terms of considering several possible 'power-in-transition paths' (e.g. a 'radical' path vs. a more 'moderate' path). Moreover, one can use forecasting and back-basting techniques – together with the 'multi-phase' model – to situate possible power strategies in a long-term perspective, possibly concluding that the 'predevelopment stage' of a transition requires a different type of power dynamic than the 'take-of', 'acceleration', or 'stabilization' stage. Some stages may require more active power exercise and antagonistic power dynamics than others. In principle, the power tool can be used as 'open process questions' on power-in-transition, to be answered and decided upon by the participants themselves. However, a transition manager/action researcher can also use the hypotheses on power in transition (see chapter 7, section 7.7.), and the power principles for transition management (see section

8.2), to provide participants with insights on how they might want to answer these question so as to increase the transition potential of their initiative.

3. Using the power tool for mobilization of actors and experiments

In the operational ‘experimentation’ phase (Van der Bosch 2010), the power tool can be used in the sense that the ‘power navigation strategy’ includes operational decisions on which resources to mobilize and how to cooperate with other groups of actors. Moreover, the power strategy also includes decisions on *what kind of* transition experiments one wants to set up, and which actors and organizations one wants to involve in these experiments. As extensively discussed previously, I argue that the transition potential of a transition initiative is highly increased when the operational phase includes the *materialization* of visions and ideas, in terms of mobilizing actual *physical* resources, e.g. distributing an alternative technology (e.g. electric car), buying a piece of land and building a sustainable house, mobilizing an activist consumer group, or something in that nature. This is also the point where an explicit power strategy is particularly important, in terms of having a strategy on how to mobilize physical resources without becoming entirely dependent on the regime.

Rather than niches being (entirely) dependent on regimes to ‘mainstream’ and ‘up-scale’ their innovations, I have argued that they should instead (also) cooperate with (radical) niche-regimes that provide alternative financial arrangements and legal structures (e.g. cooperatives, joint purchasing, crowd-funding, alternative currencies, etc.) For that purpose the designed power map of ‘the field’ is useful as an overview to identify which niche-regimes, both moderate and radical, are out there, and which are relevant for a particular experiment. The power strategy is useful to indicate possible ways in which one can cooperate and relate to those groups of actors within an experiment. If the necessary niche-regimes are not around in a specific sector or region, the experiments can focus on trying to form such a niche-regime (i.e. connecting actors that can and want to develop new institutions). Such a niche-regime can then support and enable the mainstreaming of other niches. This is also the point where it is crucial to have legal and financial expertise on board. Ideally, transition managers/action researchers should be able to provide such legal and financial expertise, and/or involve actors that do. If this is not the case, the experiments set up by the arena can focus on collecting and applying the necessary legal and financial expertise on alternative financial and institutional arrangements.

4. Using the power tool to monitor and evaluate

In a monitoring and evaluating phase, the power tool can be used to evaluate whether power has been sufficiently taken into account and appropriately dealt with. If the power tool has been used during the process, one can retrospectively evaluate the designed power map, one’s positioning therein, and one’s developed power strategy, and considering how these can be adapted and improved. Such evaluation is especially about evaluating to what extent the power map and strategy have been useful in the operational experimentation phase, possibly leading to an adaptation of the power strategy, a redesign of the power map, and/or a repositioning of the arena or experiments

within the power field. The power map might also need to be ‘up-dated’ for new developments. Furthermore, the power tool can be used for ‘reflexivity’ more generally, in terms of discussing the ethics of power exercise. The ethical principles formulated in the fourth step of the power tool (see section 8.3.1), can also be used to evaluate to what extent participants believe that their activities so far have (not) fulfilled these ethical power principles, possibly leading to a reformulation / further specification of these principles. Just like the TM-cycle itself, the different phases and steps are not entirely separate or consecutive, but rather cyclical or parallel. Especially ‘reflexivity’ about one’s power exercise – and subsequent ethical discussion – is not only about evaluating and monitoring the other ‘steps’ retrospectively, but also about critically reflecting on one’s power strategy, before and during the process. So far the power tool and how it can be used in the different phases of a TM-cycle (see summary in the figure below).

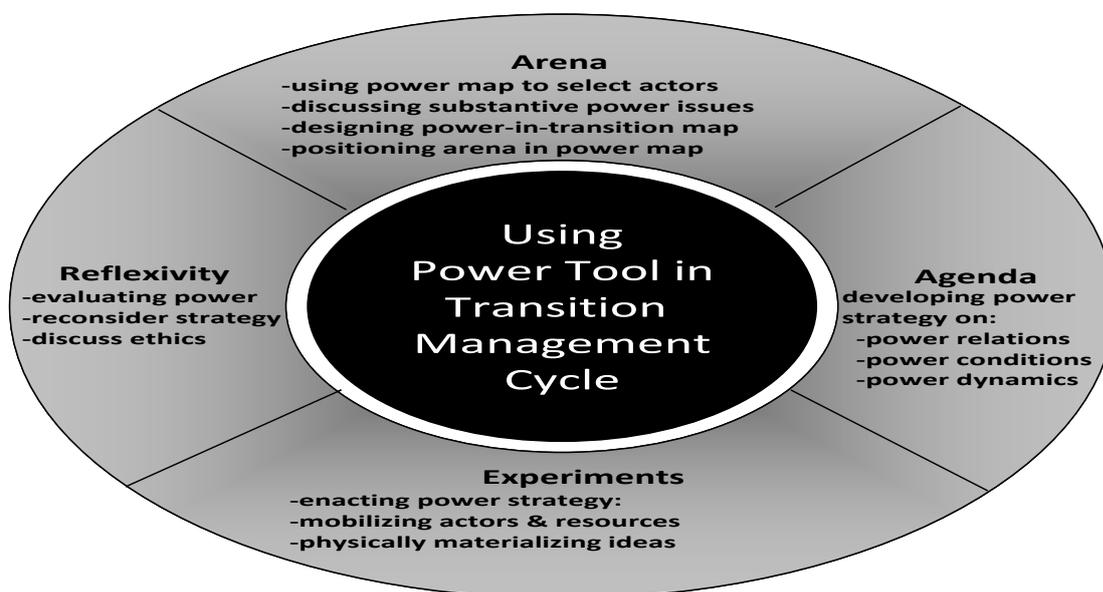


Figure 21. Using the power tool in the TM-Cycle

8.3.3. Empowerment tool

The empowerment tool operationalizes concepts on organizational cultural and intrinsic motivation (see chapter 3, section 3.3) for participatory use, consisting of three ‘steps’: 1) creating an empowering organizational set-up, 2) assessing the intrinsic motivation of individual participants, and 3) increasing the intrinsic motivation of a group of actors.

Step 1. Creating an empowering organizational setting

The contrast between a hierarchical culture versus empowerment culture is used to design and/or (re)consider the organizational setting of a particular initiative or group of actors (e.g. project, program, organization, department, arena). The table below can be used for discussion with participants. The main question being: how do we, as a group, want to organize ourselves, how do we take decisions, and how do we account for those decisions? How do we deal with our commissioning authority and/or home organization?

Hierarchical Culture	Empowerment Culture
Planning	Visioning
Command and control	Partnering for performance
Monitoring	Self-monitoring
Individual responsiveness	Team responsibility
Pyramid structures	Cross-functional structures
Workflow processes	Projects
Managers	Coaches / team leaders
Employees	Team members
Participative management	Self-directed teams
Do as you are told	Own your own job
Compliance	Good judgment

Table 20. Hierarchical culture versus empowerment culture (source: Randolph, 2000:98)

Even though a 'transition arena' is ideally free of hierarchical structures, the participants themselves often still work in an organizational context in which they have to deal with such hierarchical structures. Moreover, in practice, transition arena processes as a whole are also embedded in a hierarchical context related to the partners who commission and finance the process.

Another reason why it is important to explicitly discuss the contrast between a hierarchical culture and a culture of empowerment, is to make sure that participants are aware and prepared for the possible disadvantages of an empowerment culture. In the projects and programs under study, participants often complained that they were not properly 'managed' or 'monitored', that they were not 'told clearly what to do', that the process was not 'planned strictly enough', and so on. Or in other words, participants seemed to prefer a clear hierarchical structure. I argue that therefore, it is necessary to prepare participants in a transition management or 'transitioning' process, that they should not expect a hierarchical culture, and that a culture of empowerment also requires a different attitude and taking more responsibility, initiative, and risk.

Equally, before people can empower others, they also need to be aware of this contrast between a hierarchical culture and culture of empowerment. So far I primarily discussed participants who are used to work at the lower or middle-range levels of hierarchical structures. However, TM-processes often also involve individuals who are used to work at strategic top-levels of hierarchical structures, and therefore accustomed that other individuals comply with their decisions. They too need be prepared that a transition management process is different, e.g. that being a member of a transition arena does not mean that one can plan or command what others will do.

This may seem obvious to some, but it may not be obvious to others who might expect that taking part in a transition arena will 'grant' them decision making power. Using the table above to reconsider the organizational setting is especially relevant in the 'transitioning' of ongoing projects, in which there often are 'separate steering boards' and 'management teams'.

Step 2. Assessing the intrinsic motivation of individual participants

Moving on beyond the organizational setting towards more psychological processes, the second step serves to assess the intrinsic motivation of individual participants regarding their own activities within a particular initiative. Such individual assessment is necessary to know what the overall level of intrinsic motivation is amongst a particular group of actors (which is helpful for the next step on how to increase this intrinsic motivation). A transition manager / action researcher can identify what the level of intrinsic motivation amongst participants is, by assessing the extent to which participants have the following positive tasks assessments regarding their daily activities (within the initiative):

Assessing to what extent practitioners have positive task assessments about their daily activities:	Assessing whether and to what extent practitioners have positive task assessments regarding a specific sustainability transition ambition:
Impact: 'I can make a difference'	'I contribute to a sustainability transition'
Competence: 'I am good at what I do'	'I have competences to contribute to sustainability'
Meaning: 'I care about what I do'	'I care about contributing to a sustainability transition'
Choice: 'I can determine what I do'	'I can determine how I contribute to sustainability'

Table 20. Assessing intrinsic motivation / positive task assessments of participants

In order to accurately assess the level of such positive task assessments, one can interview participants, and/or one can use a survey that participants fill in individually. Obviously, this is not a matter of simply asking 'yes' or 'no' questions. Rather, questions are specified in relation to a specific transition ambition (e.g. transition to sustainable mobility), or specific activities (e.g. participating in a Transumo project). One can ask a question such as, 'how much do you think your activities in Transumo contribute to a sustainability transition' (possible answers ranging from very much to very little), or a question such as, 'which competences do you thinking you have and which competences do you think you lack to contribute to sustainability transition' (answer open).

Through such interviews and/or surveys, the transition manager/ action researcher can get an overall impression of the level of intrinsic motivation amongst a group of participants, including an overview of the competences that participants feel they have, or lack. This overview serves to identify the 'empowerment needs' of the group of participants, and to use the very outcomes of the assessment to facilitate these empowerment needs. Moreover, being interviewed or filling in the survey gets participants to think about their sense of impact, competence, meaning, and choice, which is necessary for the next step.

Step 3. Increasing the intrinsic motivation of a collective group of actors.

The third step serves to actively increase the intrinsic motivation of participants, by enabling positive task assessments and facilitating positive interpretative styles. This is partly done by moving *beyond individual* task assessments (either negative or positive) towards *common* positive task assessments:

- Impact: ‘**WE** contribute to a sustainability transition’
- Competence: ‘**WE** have competences to contribute to sustainability transitions’
- Meaning: ‘**WE** care about contributing to a sustainability transition’
- Choice: ‘**WE** can determine how we contribute to a sustainability transition’

This exercise is to be done in a participatory process with all participants, openly discussing to what extent participants feel that they, *as a group*, have impact, competence, meaning, and choice. The transition manager/action researcher can facilitate this by sharing the outcomes of the interviews/survey, particularly in terms of identifying how participants can *complement* one another. This in itself may increase the collective intrinsic motivation of a group of actors. Moreover, positive task assessments can be further stimulated by reconsidering the interpretative styles through which participants:

- Attribute cause and effect
- Evaluate failure and success
- Envision future events

For participants to have positive task assessments (either individually or as a group) they need to 1) attribute cause and effect in such a way that they can recognize their impact on the societal system, 2) evaluate failure and success in such a way that they recognize their competences, and 3) envision future events in such a way that they can recognize their choice and the meaning of what they are doing (see chapter 3, section 3.3.).

Several instruments offered in the TM-literature help to facilitate such interpretative processes that foster positive task assessments. The very set up of the transition arena is essentially about enabling an empowering interpretative style on what ‘we as a small group of visionaries’ can do to enable a transition. The SCENE-method used for integrated system analysis (Loorbach 2007, Grosskurth & Rotmans 2005) facilitates the attribution of cause and effect at a systemic level, thus providing a group of actors with an understanding of what the challenges in a societal system are. The TRANSCE-scenario method (Sondeijker 2010) serves to envision future events, to attribute cause and effect in a long-term period of time, and to relate this to actor activities, through a combination of back-casting and forecasting techniques, as well as mapping out different transition paths that can lead to a sustainability vision. Both the transition monitoring method (Taanman forthcoming) and the method for setting up transition experiments (Van der Bosch 2010) facilitate a different way of evaluating failure and success, in which experimenting and learning is acknowledged as a success in itself.

The power tool presented in the previous section complements these existing instruments, by facilitating the attribution of cause and effect in explicit power terms and enabling participants to map out their possible impact in a field of complex power dynamics. As such, the empowerment tool is not entirely a ‘new’ tool separate from the other tools used in TM, rather it complements them. The empowerment tools helps to

specify how exactly these other TM instruments are and can be used to facilitate interpretative processes that trigger positive task assessments.

8.3.4. Further developing and testing the power and empowerment tools

Whether and to what extent these power and empowerment tools work in a participatory context remains to be tested in the same way that the other transition management instruments have been applied, tested and adapted in practice. This requires *transdisciplinary* and *participatory research*, involving the experience, tacit knowledge and feedback of practitioners. Although I obviously did use some tacit knowledge of practitioners as a basis to develop these tools, I did not develop and apply these tools *together* with practitioners, nor did I try to use these tools to facilitate an ongoing process. This can be done in the future, by testing the tools through participatory methods in Integrated Sustainability Assessment, such as focus groups, scenario exercises, and dialogue methods, or simply by experimenting with tools in their current form within ongoing initiatives, and see whether they are seen as useful by practitioners involved. One of my 'empirical lessons' on transition management has been that practitioners need to be provided with 'smaller' insights and more pragmatic tools (see sections 8.1.1 and 8.1.2). Although the power and empowerment tools as presented in this chapter seem 'small' and 'simplified' to me in the context of this dissertation as a whole, I am obviously not a good judge of whether or not these tools are small, simple, and accessible enough to be used in practice (probably not). Testing the tools in practice would probably lead to considerable adaptation and reformulation, especially in terms of translating the abstract terminology in more accessible words, and in terms of simplifying and reducing the various steps so as to make the application of the tool less time-consuming.

Chapter 9.

Conclusions: Insights on Power in Transition

In this concluding chapter, I wrap up the insights and scientific contributions provided by this research. This is quite a challenge, due to the explorative, interpretative, interdisciplinary, 'interparadigmatic', and 'transdisciplinary' nature of the research. This process has included; 1) going back-and-forth between conceptualization, observation and theory; 2) drawing upon various sources of literature (on power, empowerment, transition and sustainability); 3) providing a thick description of cases; 4) presenting an analytical power-in-transition framework; and, 5) formulating some management principles and participatory tools. In this concluding chapter I aim to recapitulate this process as concisely, yet as accurately as possible.

First, I explain how I answered the research questions as presented in the introduction. Second, I discuss the main insights in terms of their scientific contribution to the state-of-the-art, discussing both transition studies as well as social science more generally. Third, I identify the most important remaining questions and specify challenges for future research. To close this chapter, I present my own future research agenda. I explain how I plan to use my power-in-transition framework and the participatory tools that were developed in this dissertation.

9.1. ANSWERING THE RESEARCH QUESTIONS

The main research question in this dissertation has been: *What is the role of power in sustainability transitions, and what does this mean for transition management?* I now recapitulate how I answered the four main sub-questions:

1. *How can the role of power in sustainability transitions be studied?*
2. *How do power and sustainability transitions interact in practice?*
3. *How can the role of power in sustainability transitions be theorized?*
4. *How can power be integrated in the transition management model?*

9.1.1. How can the role of power in sustainability transitions be studied?

The answer to this question is primarily epistemological, and is primarily discussed in Chapter 2 and 3. I argued that at the particular stage at which my study was started – in which the relatively new field of transition studies did not yet include an explicit conceptualization of power – it was necessary to make use of an *explorative* research design. Rather than ‘testing’ predefined hypotheses, the aim has been to ‘generate’ hypotheses on power in sustainability transitions, and to provide an analytical framework with which to further research these hypotheses.

The first challenge therein was *conceptual*. Linking the notions of ‘power’, ‘sustainability’, and ‘transitions’ presents a complicated philosophical and semantic challenge. ‘Sustainability’ is an *essentially contested* notion, and ‘power’ can be viewed as a so-called *family resemblance* concept. In both cases, this means that the concepts cannot be generically captured in all-encompassing definitions. In addition, the concept of ‘transitions’ implies a *long-term and systemic view of societal transformation*, which cannot be translated into terms of linear causalities and instead implies a complexity paradigm. Therefore the main challenge has been to explore how a family resemblance concept such as ‘power’ can be conceptualized in relation to such an inherently contested and complex concept as ‘sustainability transitions’.

I argued that exploring this conceptual challenge cannot be pursued through a merely theoretical exercise, and that it needs to (also) be informed by empirical observations of how actors with ambitions of transformative sustainability (try to) exercise power to achieve their goal. In order to systematically analyze such empirical observations, it was necessary to clarify what we mean by ‘exercising power’, and to conceptualize it in such a way that it acknowledges the most basic dimension of (sustainability) transitions, i.e. long-term transformative change across multiple domains. In chapter 3 I argued that such conceptualization of power was lacking in the literature on power, which tends to privilege stability over change, and often focuses on one domain. As such, I developed an interdisciplinary and actor-specific conceptual power framework that includes (the possibility of) long-term transformative change across multiple domains, starting with a working definition of power as ‘the capacity of actors to achieve a particular goal’. This power conceptualization was then operationalized in empirical questions to be asked about empirical case-studies, i.e. groups of actors with an ambition of transformative sustainability (see table below).

Which resources are mobilized?	
<i>Type of Resources</i>	mental, human, artifactual, natural and monetary
Which types of power are exercised?	
<i>Innovative power</i>	capacity to invent and create new resources
<i>Reinforcive power</i>	capacity to reinforce and reproduce existing structures & institutions
<i>Destructive power</i>	capacity to destroy and annihilate existing resources
<i>Transformative power</i>	capacity to invent and develop new structures & institutions
<i>Systemic power</i>	capacity to enable and safeguard the survival of a societal system
What are the power dynamics / how do the different types of power exercise interact?	
<i>Synergetic dynamics</i>	different types of power enable and support one another
<i>Antagonistic dynamics</i>	different types of power disrupt and restrict one another
Which power relations can be distinguished?	
<i>Power 'over'</i>	mutual dependence, one-sided dependence or independence?
<i>'More' power to</i>	cooperation, competition or coexistence?
<i>'Different' power to</i>	synergy, antagonism or neutrality?
How and to what extent are the conditions of power met?	
<i>Conditions of power</i>	access to resources, strategies, skills and willingness to exercise power
What is the level of intrinsic motivation (i.e. level of positive task assessments?)	
<i>Sense of impact</i>	'I can make a difference'
<i>Competence</i>	'I am good at what I do'
<i>Meaning</i>	'I care about what I do'
<i>Choice</i>	'I can determine what I do'
Which interpretative styles prevail?	
<i>Attribution</i>	attributing causal relations (related to own actions)
<i>Evaluation</i>	evaluating success and failure
<i>Envisioning</i>	anticipating future events and one's role therein
To what extent is there a culture of empowerment?	
<i>Organizational Setting</i>	empowerment setting vs. hierarchical setting (management studies)
<i>Who is (dis)empowered</i>	paradoxes of (dis)empowerment (critical theory)

Table 21. Operationalization of power & empowerment concepts for empirical analysis

For each empirical case-study four main questions were asked: 1) *what is the transformative sustainability ambition*, 2) *how is power exercised?*, 3) *how and to what extent are actors empowered*, and 4) *what is the overall transition potential?* The first question focused on the overall ambition and set-up of the project or program under study; *what is to be transformed (why, how and when), who transforms, what is new, how is sustainability dealt with, and (how) is transition management applied?*

Questions two and three were answered by using the conceptual framework on power and empowerment and the operational sub-questions (see overview in table above). The fourth question on 'overall transition potential' focused on *future* visions, proposals, and plans in the case-studies, which formed a large part of the activities in the projects and programs under study. In that regard the following hypothetical question was asked: *what if these future visions, plans and proposals as provided by the projects and programs would be realized... what kind of 'sustainability transition' would that be and how would power be exercised? Which future power relations are implied by these future visions,*

plans, and proposals? To what extent do these envisioned power relations differ from current ones, and who would be empowered or disempowered by these new power relations?

As for research methodology, I argued that this explorative research would be best served by an *interpretative research approach*. As such, this research was based on scientific criteria underlying the interpretative approach – i.e. ‘thick description’, ‘reflexivity’, ‘triangulation’, and ‘phronesis’ – rather than (neo)positivistic criteria such as ‘falsifiability’, ‘internal and external validity’, or ‘generalizability’. Rather than testing hypotheses, or ‘proving’ causal relations on the basis of large data sets, I have explored the role of power in sustainability transitions through interpretative research methods in a few case-studies. In chapter 2 I explained my methods of case-selection and data-collection (i.e. ethnography, participant observation, action research, interviews, and document reviews) and data-analysis (i.e. discourse analysis, deconstruction, and narrative analysis).

Moreover, I started chapter 2 by clarifying my epistemological positioning, by discussing the similarities and differences between postmodernism and deconstruction on the one hand, and the complexity paradigm underlying transition studies on the other hand. While all these approaches emphasize the complexity, interpretability, and uncertainty of societal phenomena, and while they all distance themselves from positivistic research on linear causalities, there is an important difference. This difference is particularly noticeable in the concept of transition *management*. While the postmodern view of societal complexity typically refrains from prescriptive and evidence-based governance models, transition management research has the explicit ambitions to provide a prescriptive mode of governance. Although all these research approaches acknowledge uncertainty and the limitation of scientific knowledge, there is significant disagreement on whether this knowledge can or should be used to purposively influence society towards a desired goal. The postmodern perspective questions whether social research can or should be translated in terms of purposive governance or instrumental policy recommendations. Transition management research, however, *starts off* from the premise that insights into societal complexity can and should enable us to better ‘steer’ society into a desired (i.e. more sustainable) direction.

Within this ‘disagreement’, I have positioned my research as follows. Although my interpretative research approach is partly inspired by the postmodern tradition, I have partly distanced myself from merely ‘deconstructive’ approaches that are often observed in postmodernist social science research. This is directly relevant for the sub-question under discussion: *how can the relation between power and sustainability transitions be studied?* From a postmodern perspective, the most evident way to go about studying power in relation to sustainability transitions – and especially the role of power in transition management – would be to deconstruct the very notion of ‘sustainability’ and ‘transition management’, and to demonstrate how attempts to apply transition management or achieve sustainability ‘fall apart’ under real-world power struggles. Chapter 2 provided several examples and literal quotes of researchers who take this approach, and/or argue that this is the way to go in social research and policy analysis.

While such deconstructive analysis is indeed important – and thus has formed a substantial part of the analyses in this dissertation – I have argued that for me the challenge does not end here. In response to political analysts that claim that *negative* policy suggestions are more valuable than positive policy recommendations, I have argued that in fact there is not so much difference between the two. Both negative as well as positive policy recommendations are equally ‘normative’, and both can exert significant influence on policy in practice. The researcher who influences policy-making through negative recommendations (i.e. ‘don’t do this’), is equally responsible for potential outcomes, as is the researcher who influences policy-making through positive recommendations (i.e. ‘do this’). This is especially the case when we acknowledge the power of *non-decision making*, as emphasized by Lukes (1974). As such I argued that social scientists and policy analysts have a responsibility to accompany their deconstructive analyses with *reconstructive* analyses.

I have related this to epistemological ‘is-versus-ought’ debates in social sciences; between those that claim that social science should primarily aim to ‘describe’ and ‘explain’, and those that say it should ‘prescribe’ and ‘predict’; between those that call for an understanding of how things ‘are’ and those that emphasize the understanding of how things ‘ought to be’. Regarding these debates, I argued that the study of power in transition is not only about studying how things ‘are’ at a specific point in time, nor about how they ‘ought to be’. Rather, it is also and primarily about studying how things *can be*, now, in the near future, and in the long-term. Power is what provides us with that which ‘can be’, and the challenge is to approach the notion of power in terms of *transformative capacity*; the human ability to change what ‘is’ into that which he or she thinks ‘ought to be’. Moreover, when we are faced with inherent ‘can be’ questions – e.g. long-term transition processes and complex sustainability issues – we cannot afford to ‘choose sides’ between ‘is’ versus ‘ought’ approaches to science. Rather, we need to combine different epistemological paradigms and explore the whole spectrum of what was, what is, what seems to be, what people want, and what we think will be, might be, or ought to be. To accomplish this we need both deconstruction and reconstruction, both qualitative and quantitative research, both ‘positivistic’ and ‘postpositivistic’ paradigms.

This is not to suggest that every *individual* researcher who criticizes policy for how it is, should also provide a constructive alternative as to how it should or can be. Such reasoning would comprise a logical fallacy that seriously threatens social critique, for the fact that one cannot come up with a better alternative does not disqualify the critique of a status quo. What I do argue, however, is that the *collective* of social researchers has a responsibility to provide reconstructive recommendation to accompany deconstructive critique. For that end, social researchers with dissimilar epistemological traditions and different foci need to cooperate, or at least acknowledge their mutual value (which is currently not always the case, as discussed in chapter 2). In this dissertation I have aimed to provide an analytical framework to study the role of power in sustainability transitions, which can be used for both deconstructive and reconstructive analysis, and for both interpretative and (neo)positivistic research. Moreover, besides the rather deconstructive and critical empirical analysis of transition management practices and sustainability discourses, I have also explicitly aimed to reconstruct prescriptive transition management

principles and participatory ‘tools’ that include power and empowerment insights. Although these principles and tools have not been applied and tested in practice, I dare argue that they should be, and that such action research – with the explicit ambition to use research insights for social improvement – is an indispensable element of gaining further understanding on the role of power in sustainability transitions.

A next step would thus be to test these power and empowerment principles and tools in an action research setting, and – possibly - to further develop the principles and ‘tools’ (see section 9.3. on challenges for future research). Although such action research and instrumental policy focus is not an integral part of the power-in-transition framework – which can also be used purely analytically – I do argue that the application of the framework should always harbor both a *deconstructive* as well as a *reconstructive* dimension. Or in other words, the analytical framework has been developed to critically analyze transformative practices and to unravel power dynamics, but it has also been explicitly designed in such a way that it can contribute to the empowerment of groups of actors that have a particular transformative ambition. Obviously, whether and to what extent the analysis of power in transition is used to empower actors under study, depends on the individual researcher who undertakes the analysis. However, as the ‘developer’ of this ‘power-in-transition’ framework I would like to end this section by challenging any researcher who would want to make use of it; do not only unravel underlying power dynamics or deconstruct transformative sustainability discourses, but also acknowledge the efforts of actors under study – be it regime- or niche-players, moderate or radical individuals – and take up the challenge of providing positive recommendations that could help to improve these efforts.

9.1.2. How do power and sustainability transitions interact in practice?

The answer to this question is primarily empirical, provided by part II of this dissertation: chapters 4, 5, and 6, and the two intermezzos. The case-studies – on the *A15-project*, the *Transumo program* and the *innovation program Sustainable Logistics* – were analyzed by using the conceptual power framework to ask predefined questions, about a clearly delineated group of actors that aim to transform a clearly delineated subsystem of the Dutch mobility system. The intermezzos allowed for exploring additional issues. The intermezzo on *Transition Discourse and Sustainable Mobility* explored how transition discourse was and is used within and beyond the Dutch mobility sector, and served to contextualize the selected cases in their wider discursive and political context. The intermezzo on the *South Wing Region* served to explore the role of power beyond the transport sector, by discussing (transition) discourses on regional spatial planning.

The empirical observations have been focused on Dutch transition discourse(s), and on projects and programs related to the Dutch transport sector. Moreover, therein the focus has been on transition projects and programs of a specific kind; they were primarily initiated by researchers and/or policy-makers, and they had a strong orientation towards developing knowledge, visions, and standards that would *facilitate others* to transform the transport sector (rather than having a pro-active ambition to transform the sector from within the projects or programs). Furthermore, besides the intermezzo on broader

Dutch transition discourse, the focus in the other case-studies has been on the *micro-politics* within specific projects and programs, i.e. how the strategic discourse on sustainability transitions ‘landed’ at tactical and operational levels. As such, the observations on ‘how power and sustainability transitions interact in practice’ are confined to this particular empirical context. However, I hypothesize that several empirical observations might apply to the politics of ‘sustainability governance’ more generally.

Most of the empirical observations are probably typical for the types of programs and projects under study, i.e. Dutch network-organizations initiated by research and/ or government bodies, focused on ‘facilitating’ the transport sector and providing a ‘platform’ for partnerships between public, private, and scientific actors. Had I researched cases with other types of actors – e.g. strategic coalitions at higher political levels, initiatives by business actors or NGO-activists – or cases in different sectors, in other countries and in different cultural circumstances, the empirical observations might have been very different. Perhaps the exercise of power would have been much more proactive, involving more civil society and the direct mobilization of physical resources. Perhaps there would have been more antagonistic power dynamics and overt critical debate, or less one-sided dependence and more cooperation. Maybe there would have been less hierarchy and less bureaucracy. Also, the sense of powerlessness might have been less, and individuals may have been more intrinsically motivated and self-confident about their ability to trigger sustainability transitions. Within higher strategic political circles, amongst business CEOs or NGO-activists, perhaps one might even have observed the opposite, i.e. hubris, overconfidence of one’s power and overestimation of one’s societal impact.

As such, the empirical observations within the case-studies can obviously not be generalized for *all* projects and programs that aim to contribute to sustainability transitions, either in transport or other sectors. Nevertheless, the empirical insights may more generally apply to a *particular type* of projects and programs, i.e. technocratic platforms and network-organizations initiated by researchers, consultants, and/or government actors, based on neo-corporatist and ‘tripartite’ models for societal improvement that focus on ‘win-win partnerships’ between public and private actors. While some of these phenomena may be typical for the Netherlands – famous for its corporatist model and public planning traditions – it seems that many ‘sustainability partnerships’ emerging across the western world are taking a similar technocratic and ‘tripartite’ approach. As such, the empirical observations discussed in this research might be insightful for other ongoing developments in sustainability governance. I now recapitulate the seven most important empirical observations.

First, the empirical case-studies demonstrate how large amounts of financial resources – together amounting to more than 100 million euro – were made available by government for projects and programs that serve sustainability transitions. These projects and programs mostly featured science, business, and government. Civil society, and especially the weaker segments of society (who can be said to suffer the most from ‘unsustainability’), were not involved. I doubt that this observation is only reminiscent of

the programs and projects under study. Other researchers have empirically demonstrated that there are strong pressures for public officials to “provide beneficial policy” to groups that are powerful and positively constructed, even though these groups may have lesser ‘need’ for government support (Schneider and Ingram 1993:334). Business and science provide typical examples of such powerful and positively viewed groups that are favoured in distributive policies. The legitimizing rationales used by government “feature the group’s instrumental links to the achievement of important public purposes and economic competitiveness”, and “achieving the instrumental goals of policy will be emphasized as the reason for the selection of particular target groups” (ibid:339). This quite literally reminds us of the ‘mission’ of Transumo; to contribute to “advances that help to strengthen the competitiveness of the Dutch transport sector (Profit) and to preserve and improve spatial and ecological (Planet), and social (People) aspects of mobility”.

The second observation concerns how discourses on sustainability transitions are ‘framed’. The projects and programs under study demonstrated how primary economic efficiency goals in the transport sector were framed in sustainability terms. Not only is transport efficiency good for ‘profit’, it supposedly also leads to less use of fossil fuels and less emissions (i.e. good for ‘planet’), and also to less noise and air pollution (i.e. good for ‘people’). In this manner, any effort to improve efficiency can be framed as ‘contributing to sustainability transitions’. Meanwhile, more fundamental issues underlying sustainable development were left untouched, such as the increase of transport flows across the globe, unbridled economic growth, and social inequity. This limited interpretation of sustainability partly had to do with functional sector boundaries, in which the focus was on the transport sector rather than on sustainability at a broader societal level – thus justifying the exclusion of factors that fell ‘outside’ the transport sector (e.g. spatial planning or material use). The intermezzo on the South Wing region demonstrated how a regional approach was also dominated by functional economic concerns, in which social and ecological well being was primarily framed in terms of the international economic competitiveness of the region. Although these observations may be typical for the programs and projects under study, this strategic and narrow ‘framing’ of sustainability discourses can be generalized as a more widespread phenomenon. Smith and Kern (2007) discussed the strategic malleability of ‘sustainability transitions’ in the energy sectors in the Netherlands and the UK, demonstrating how transition discourses on sustainable energy are captured by vested interest and powerful regime actors.

A third empirical observation concerns the type of resources that were mobilized, and the type of power that was exercised by the projects and programs under study. There was mostly a *passive* exercise of power that primarily focused on the mobilization of *monetary* and *mental* resources (i.e. money, information, ideas, and concepts). The programs and projects under study did not position themselves as power-exercising actors but rather as ‘facilitators’ and ‘platforms’ for the exercise of power *by others*. Physical resources (i.e. technology, products, infrastructure, raw materials, land, space) were not directly mobilized. The irony is that even though the programs and projects did not directly mobilize technological artifacts themselves, they did have a highly technocratic approach, focused on spreading *technical and instrumental knowledge* (e.g. models, measuring instruments, standards, criteria, etc.). To a certain extent this passive exercise of power

was *transformative* and *innovative*, in the sense that the groups of actors under study created new concepts and also developed new paradigms and (ideas for) new institutional arrangements. However, in terms of *power dynamics*, it was observed that this innovative and transformative exercise of power ultimately enabled and strengthened *reinforcive* exercise of power, in terms of reinforcing and reproducing existing institutions and paradigms. For instance, market mechanisms and pricing policies played a central role in all projects and programs under study. While the idea of ‘rewarding rather than punishing’ - as a means to stimulate desirable mobility behavior - may be framed as a ‘new (mobility) paradigm’, it does also fit in with the prevailing neo-liberal paradigm and new public management, in which the government uses financial mechanisms to stimulate desirable behavior, while (supposedly) safeguarding the ‘individual freedom of choice’ of both consumers and private firms. Meanwhile, the principles of economic growth, individualization, and increasing transport flows, remain unquestioned. As such, in terms of *systemic* power exercise, it seemed that the projects and programs under study were primarily oriented towards sustaining the functioning of an existing subsystem (i.e. the transport sector and/or a regional economic cluster), rather than (aiming to) create new, alternative societal systems.

The fourth empirical observation concerns the type of internal and external power relations in and around the project and programs under study. Most typically, these power relations could be characterized in terms of *dependence*, *competition*, *co-existence*, and *synergy*. Although the dependence relations were in principle ‘mutual’ – given the focus on tripartite and public-private partnerships – in practice it seemed that researchers, consultants, and managers were *more* dependent on government and business partners than the other way around. The ideal of demand-driven and ‘transdisciplinary’ research created a situation in which researchers, consultants, and process managers became one-sidedly dependent on public and/or private stakeholders. On several occasions government commissioners and/or business partners threatened to quit participation and/or cut investment in the project, if the direction of the project did not correspond with their expectations. This also relates to the observation that the projects and programs under study mostly sought *synergetic* relations with dominant public institutes and business actors in the transport sector, and seemed to avoid *antagonistic* power relations. Or in other words, the discourse was focused on facilitating dominant actors and contributing to their (political and/or economic) goals, and there was little or no overt critique or action to resist, disrupt, or countervail these dominant actors. Despite this ‘facilitative’ attitude and orientation towards synergetic power relations, there was relatively little cooperation amongst the different projects and programs under study. Different projects, innovation programs, and sustainability platforms seemed to either compete with one another or ‘co-exist’, working in parallel, each having a slightly different focus, a slightly different network, or a slightly different process approach. Also *within* the projects and programs under study, there often seemed to be competition and/or co-existence amongst individual participants and project-leaders. In all case-studies it was observed how disagreements and dissimilar priorities were ‘solved’ by fragmenting a program or project into different subprojects or working groups.

The fifth empirical observation concerns a widespread sense of ‘powerlessness’ and a relatively low level of intrinsic motivation amongst (individual) actors regarding sustainability transitions. As described in the intermezzo on (transition) discourse in the Dutch transport sector, it was striking to notice how individuals – in interviews, meetings, and informal conversations – seemed to combine the following three perceptions:

1. *I / we do not have power*
2. *They have (more) power*
3. *Power determines the way things go*

Even those actors typically characterized as ‘powerful’ (by others) – e.g. the national Transport Department (V&W), the Rotterdam Port Authority, or large private firms – seemed to primarily emphasize their relative powerlessness in the face of international economic competition and/or the ‘demands’ of ‘the consumer’ (i.e. ‘the market’) or ‘the voter’ (i.e. ‘democratic politics’). Although it is often said that transformation and change are primarily hampered by ‘vested interests’ and ‘the powers that be’, these empirical observations have led me to argue that it may not be power, but rather quite the opposite, i.e. a sense of *powerlessness*, that forms the main obstacle to transformative change.

The sense of powerlessness also relates to the *conditions* of power exercise – access to resources, skills, strategies, and motivation – and to the process of *empowerment* (i.e. attaining the conditions of power). It is not only about how much access to resources, skills, strategies and motivation participants have ‘objectively speaking’, but also about the extent to which they themselves *believe* that they do, and to what extent they find that this suffices to actually make a difference. In the empirical case-studies, it was observed that there was ample access to different types of resources, skills, strategies, and motivated individuals. However, there seemed to be doubt or even cynicism amongst participants regarding the extent to which these conditions would actually enable them to contribute to sustainability transitions. At the end of each empirical chapter, I discussed this issue in terms of levels of intrinsic motivation; the manner in which participants assessed their own activities, and the interpretative styles through which they attributed cause and effect, evaluated success and failure, and envisioned future events. Although I did not delve into individual psychological processes, it was striking to notice that during interviews, meetings, and conversations, there was an overall collective tendency to downplay the sense of impact, meaning, competence, and choice regarding the transition to sustainability mobility. While many participants and project leaders seemed confident about their transport expertise and ability to achieve short term project results, the ambition of ‘a sustainability transition’ was most often described as being ‘out of reach’ and ‘beyond the transport sector’ (e.g. because several factors such as energy supply, consumer demand, or spatial planning fall outside the boundaries of ‘the transport sector’). In this sense, the strict, functional subsystem focus on the transport sector seemed to be disempowering for participants’ sense of impact on long-term sustainable development.

The sixth empirical observation relates to the hierarchical structures under which the projects and programs under study operated, and the effect this had on the level of intrinsic motivation. Although all case-studies incorporated some ‘horizontal’ structures (thereby enabling some elements of a ‘culture of empowerment’), such as working in ‘network’-organizations, project-‘teams’, and ‘partnerships’, there was still a prevalence of vertical, hierarchical structures. The *Transumo* program, the *A15-project* and the *Sustainable Logistics* program, all had a hierarchical set-up, including steering boards, advisory committees, stakeholder platforms, management teams, project participants, and facilitative staff. The verdict of ‘the steering board’ was a recurring and dominant theme in meetings, often precluding or excluding options and choices of managers and participants. In the *Sustainable Logistics* program, this was accompanied by the verdict of the commissioning authority (i.e. the Transport Department of VW), and the directors of the hosting organization (i.e. Connekt). *Transumo* participants – in the *A15-project* and other *Transumo* projects, as well as those working at the program level – recurrently complained about the bureaucracy and administrative hassle of the subsidy regulations imposed by the national government, which required extensive project proposals and twice-yearly reports, including detailed accountancy reports.

Over all, it seemed that especially the program managers and project-leaders were continuously preoccupied with keeping everyone above, under, and around them ‘on board’ and satisfied, functioning under high levels of imposed extrinsic motivation, and distracted from more intrinsically motivated ambitions. It often seemed as if both managers and participants were using (or not using) particular discourses on ‘sustainability’ or ‘transitions’ because it was formally required and expected to (not) do so. This is not to suggest that the managers or participants in the programs and projects under study did not intrinsically care about the meaning of environmental goals; many of them did and had a personal motivation to improve environmental conditions. Rather, it was the specific *formulation* of their discourse and the communication thereof, which was oriented on mimicking and resonating with political, administrative and/or business interests. Rather than being the creators of their ‘own’ intrinsic discourse, the managers and participants sometimes seemed to be ‘pawns’ in a wider policy discourse.

The seventh, and final, empirical observation concerns the treatment of power (relations) as an instrumental process issue, rather than as a substantive part of sustainability. Whenever the theme of power relations – or social and organizational issues more generally – were explicitly discussed, it was approached in terms of an organizational, instrumental challenge revolving around the following question: how do we get the right actor constellations to realize a more sustainable transport sector? However, the question of which actor constellations were sustainable in *themselves*, hardly came up. This relates to the first and second empirical observation, i.e. lack of involvement of the ‘weaker segments’ of society, and the narrow discussion of sustainability as primarily a trade-off between environmental and economic concerns. When the social dimension was brought up at all, it mostly referred to organizational management issues and/or the supposed ‘societal’ demands of the ‘consumer-citizen’, who supposedly ‘demand’ economically efficient and environmentally friendly mobility. It would be fallacious to argue that that this treatment of power as a process issue – and not as a substantive issue – would apply to sustainability discourses in general. Many sustainability initiatives have a focus on

social justice, development aid, and other (global) equity issues, and do treat power as a substantive aspect of sustainability. However, the treatment of power as a process issue does seem typical for initiatives that have a functionalist and technocratic focus on socio-technical, national sectors (e.g. the Dutch transport sector, or the UK energy sector). In an era of emerging 'sustainability' discourses in national politics and business circles, it seems that the first P of the people-planet-profit-balance is often forgotten, as discussions sink into quantitative squabbling over cost-benefit analysis and trade-offs between ecological and economic targets.

These are the seven most important empirical observations of this dissertation. Obviously, there are many linkages between the different empirical observations. The specific ways in which these empirical observations are related is an important basis for answering the question about how the role of power in sustainability transitions can be theorized (as will be discussed in the next section). It is important to remember that these observations are based on case-studies in the Dutch transport sector between the years 2005 and 2009. As elaborately discussed in the first intermezzo on Dutch transition discourses, I have also observed broader developments in emerging sustainability initiatives and transition networks between 2005 and 2010. When asked 'how much power' transition discourse seems to have had so far, my answer is that it is 'too early to tell'. Transition discourses, and coalitions formed around them, are relatively new and continuously 'in development'. The concept of sustainability transitions can be interpreted as a 'boundary object' that crosses and blurs the boundaries between science, government, business, and civil society. Actors from all these sectors are currently exploring these boundaries and seeking new forms of cooperation. Innovation programs like *Transumo* have had several follow-ups and spin-offs. The insights, lessons, and instruments developed in these programs have been collected on a website for 'transition practice', formulated in accessible terms and available to all. The foundation of the NGO *Urgenda* in June 2007, was a direct spin-off of cooperation between several innovation programs, and the diverse sustainability initiatives of the *Urgenda* are currently spreading across the Netherlands. The *Urgenda* seems to have a stronger primacy of civil society and business entrepreneurs than the project and programs under study. It also exercises innovative and transformative power in a more pro-active way, explicitly mobilizing physical resources and developing new mechanisms to do so, such as collective purchasing and cooperative arrangements. Moreover, it invests much of its time and resources into empowering small entrepreneurs and existing civil society initiatives.

Although these developments have not been empirically researched or reported in in-depth case-studies, they have been visible enough to remind us of the many developments that are still to come, in whatever precise form. Gaining insight into the impact of these spin-offs and ongoing developments requires long-term research on power in transition, to unravel what and how long it takes to penetrate civil society and to exercise transformative power. As such, I have argued that in order to develop an analytical framework to study power in transition, and to generate hypotheses for future research, it is necessary to not base this *only* on the in-depth case-studies in this dissertation, but to also take account of the possible spin-offs and future developments amongst broader networks striving for sustainability transitions.

9.1.3. How can the role of power in sustainability transitions be theorized?

The answer to this question has been provided in chapter 7. The epistemological, conceptual and empirical insights as discussed in the previous sections were first integrated, and then used to theorize the role of power in sustainability transitions and to develop an analytical framework. I reformulated existing transition concepts and added new concepts, reconceptualized and expanded the multi-level framework, linked this to new insights in the state-of-the-art literature on transitions, and specified hypotheses about the relations between the different conceptual elements. More specifically, chapter 7 used empirical observations and literature discussion to do the following:

- question functional system boundaries and reconceptualizing systemic power
- distinguish between radical and moderate power exercise
- distinguish between active and passive power exercise
- address the ethics of power in sustainability transitions
- discuss a more explicit attention for discursive power
- conceptualize sustainable power relations as a substantive sustainability issues
- translate transition concepts in power terms
- reconceptualize the multi-level framework
- synthesize arguments by formulating hypotheses on power in transition
- present an analytical power-in-transition framework

Rather than summarizing all these steps in their consecutive order, I use this section to synthesize the overall argument by presenting the results, i.e. the power-in-transition framework, the hypotheses, and how the former can be used to further research the latter.

The multi-level power-in-transition framework (multi-PIT) is an analytical tool to 1) characterize (groups of) actors in power terms: and, 2) map out the power dynamics and power relations between several (groups of) actors through time. Multi-PIT consists of several typologies that broaden existing concepts in transition studies. The first typology concerns the distinction between different types of power exercise, which is related to the distinction between niches, niche-regimes, regimes, and landscape (see table below).

Type of Power	Definition	Transition Notions
Innovative	... capacity of actors to invent and create <i>new</i> resources	Niches
Reinforcive	... capacity of actors to reinforce and reproduce <i>existing</i> institutions and structures	Regimes
Transformative	... capacity of actors to invent and develop <i>new</i> institutions and structures	Niche-regimes
Systemic	... <i>collective</i> capacity of actors to shape (reproduce or challenge) macro-trends	Landscape

Table 22. Typology of power exercise in relation to transition notions

In this typology, niches are defined as (groups of) actors that exercise innovative power, regimes as (groups of) actors that exercise reinforcing power, and niche-regimes as (groups of) actors that exercise transformative power. The landscape is defined as the level of aggregation at which systemic power is exercised, defined as the collective capacity of actors to shape (either reproduce or challenge) macro-trends.

At the landscape level, a distinction is made between two types of collective exercise of power. The first type *reproduces* dominant trends at the landscape level. This is the *collective exercise of reinforcing power* by the ‘overall majority’, by regimes but also by their ‘followers’, i.e. average businesses, consumers, and voters, ‘the masses’. These masses help to sustain existing systems to continue to function under existing trends, institutions, and paradigms. In contrast, undercurrent (counter)-movements refer to the second type of collective exercise of power, that *challenges and countervails* dominant trends. This is the *collective exercise of transformative power* by critical masses and social movements, including critical ‘consumer-citizens’, entrepreneurs, and activists. These undercurrent movements (strive to) create new, alternative societal systems that function in a different manner, and under different institutions and paradigms.

Landscape Trends	Type of Systemic Power Exercised	(Groups of) actors
Dominant trends	collective exercise of reinforcing power: reproducing dominant trends	Regimes, ‘average masses’
Counter-movements	collective exercise of transformative power: challenging dominant trends and creating new trends	Social movements, ‘critical masses’

Table 23. Landscape level: dominant trends versus counter-movements

In relation to these dominant trends versus counter-movements, a distinction can be made between *radical* and *moderate* forms of power exercise. ‘Radical’ power exercise challenges dominant trends and adheres to counter-trends. ‘Moderate’ power exercise supports or goes along with dominant trends. In terms of power dynamics, this distinction between moderate versus radical power exercise refers to synergetic versus antagonistic dynamics vis à vis landscape developments (see table below).

Radical	Using one’s power to challenge and resist dominant trends and/or to strengthen undercurrent counter-movements: having an antagonistic relation with dominant trends + a synergetic relation with counter-movements
Moderate	Using one’s power to support or go along with dominant trends, thereby reproducing these dominant trends: having a synergetic relation with dominant trends

Table 24. Radical versus moderate exercise of power

Based on these distinctions I developed the multi-level power-in-transition framework; the multi-PIT (see below). The arrows in this picture refer to *synergetic relations* between different groups of actors that exercise power at different levels of aggregation.

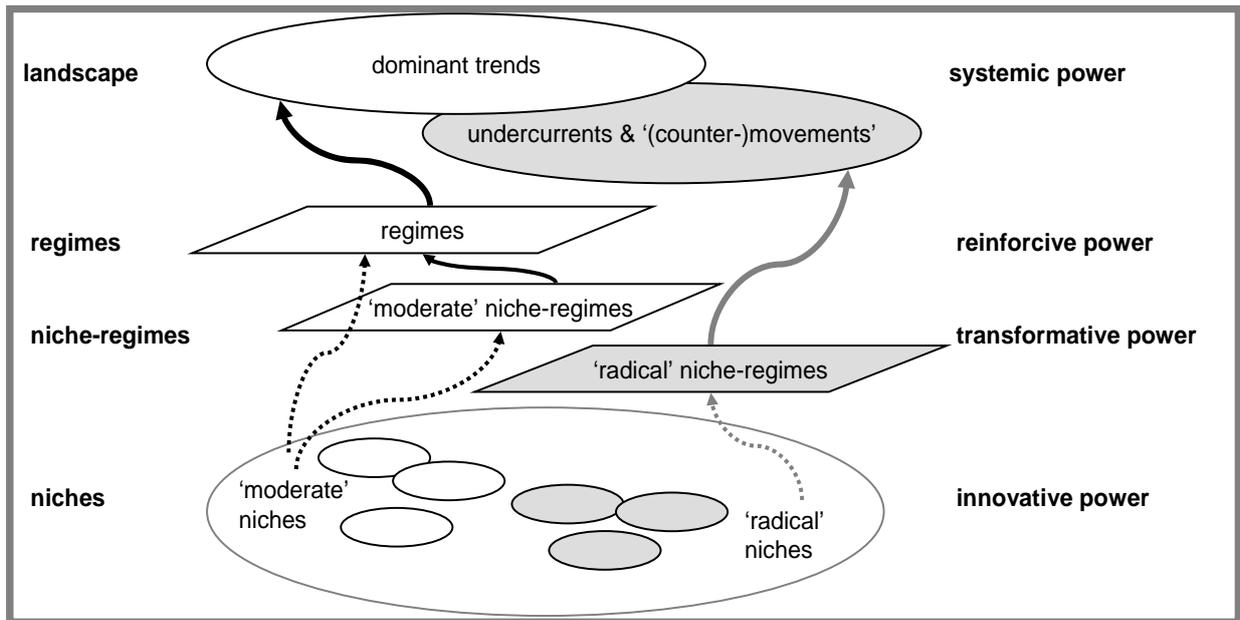


Figure 22. Multi-level power-in-transition framework (Multi-PIT)

In addition, I have proposed a distinction between *passive* and *active* exercises of power. In the former case the focus is on enabling the exercise of power by *others* (i.e. enabling others to mobilize resources), in the latter case the focus is on exercising power oneself (i.e. mobilizing resources oneself). Active exercise of power includes not only the mobilization of mental and monetary resources, but it also explicitly includes the mobilization of *physical resources*, i.e. artifacts and natural resources. This distinction between passive and active can be made for each type of power exercise – innovative, reinforcing, transformative, or systemic (see overview in table below).

Type of Power	Passive Exercise of Power	Active Exercise of Power
Innovative power	<i>Inventing</i> new resources	<i>Creating / materializing</i> new resources
Reinforcive power	<i>Reproducing current</i> structures and institutions	<i>Using current</i> structures and institutions to <i>mobilize and distribute</i> resources, including physical resources
Transformative power	<i>Developing new</i> structures and institutions (or <i>criticizing</i> current ones).	<i>Using new</i> structures and institutions to <i>mobilize and redistribute</i> resources, including physical resources
Systemic power	Collective exercise of passive power, resulting in passive, <i>discursive</i> reproduction or challenging of landscape trends	Collective exercise of active power, resulting in active, <i>physical</i> reproduction or challenging of landscape trends

Table 25. Typology of passive vs. active exercises of power

When synthesizing these distinctions to reconceptualize transition concepts, the result is a three-dimensional typology along the following dimensions: 1) passive vs. active, 2) moderate vs. radical, and 3) innovative, transformative, reinforcing or systemic power:

	innovative power	transformative power	reinforcing power	systemic power
	moderate	radical		x
passive	passive / moderate niche-regimes	passive / radical niche-regimes		passive regimes
	passive / moderate niches	passive / radical niches		
active	active / moderate niche-regimes	active / radical niche-regimes		active regimes
	active / moderate niches	active / radical niches		
x	dominant landscape trends		undercurrent counter-movements	

Table 26. Typology of transition concepts along three power dimensions

I have argued that the cases under study in this dissertation can be characterized in this typology as *passive and moderate niche-regimes*, in the sense that they focused on facilitating others (i.e. ‘passive’) to exercise transformative power (i.e. ‘niche-regime’), while having a primarily synergetic relation with regimes (thus reproducing existing dominant trends), and avoiding antagonistic relations with regime actors (i.e. ‘moderate’).

Besides these conceptual typologies, the more theoretical implications of the power-in-transition framework have been synthesized in seven hypotheses. These hypotheses were not entirely ‘induced’ from empirical observations, nor were they merely ‘deduced’ from the conceptualization of power in transition. Rather, they were a combination of both, in which the purpose is not to ‘predict’ or ‘explain’, but mainly to be explicit about my empirical and theoretical insights. I strived to clearly synthesize, formulate, and communicate these insights in explicit hypotheses, thereby emphasizing an intention and invitation to further scrutinize these insights in further empirical study, in cooperation with other researchers. In chapter 7 I presented and discussed these seven hypotheses:

Hypothesis 1. Sustainability transitions require the collective exercise of transformative power at the landscape level, i.e. social (counter-) movements and ‘radical’ groups of actors that exercise systemic power to challenge dominant trends at the landscape level

Hypothesis 2. Sustainability transitions require power interplay between diverse groups of actors: regimes, niche-regimes, and niches, both radical and moderate, both passive and active. Currently such power interplay is often lacking in practice.

Hypothesis 3. Sustainability transitions are best served by a particular combination of power relations between niches, niche-regimes, and regimes: independence, cooperation and antagonism.

Hypothesis 4. The active exercise of power (i.e. mobilization of physical resources) by radical niche-regimes and niches is a necessary condition to enter the 'acceleration' and 'take-off' phases of a sustainability transition.

Hypothesis 5. Transition discourse empowers actors to take up the paradoxical task of engaging with regime discourse, while also challenging this regime discourse. This paradoxical nature makes transition discourse unsuitable for institutionalization and formalization. When institutionalized and formally imposed, transition discourse loses its empowering function.

Hypothesis 6. (The illusion of) powerlessness and the unwillingness to exercise power is a greater impediment to sustainability transitions than the power of vested interests. This unwillingness is partly based on incapacity to deal with ethical dilemmas regarding the exercise of power in the name of sustainability transition. Dealing with these ethical dilemmas more explicitly can help to regain a sense of power.

Hypothesis 7. Sustainable power relations are a necessary condition for sustainability transitions. The outcome of a transition can only be sustainable if the power exercised within that transition has: 1) been based upon, and resulted in, power relations based upon intrinsic motivation, and 2) stayed 'within the limits of social thresholds'.

The analytical power-in-transition framework serves to further explore these hypotheses in empirical study. The starting point for such empirical research is selecting empirical cases by using the Multi-PIT. No matter which object of study one starts with – a particular (sub)system (e.g. sector or geographic entity), certain group(s) of actors (project, program, organization, or network), or a specific issue, discourse, trend, or 'movement' (e.g. sustainable mobility, capitalism, environmental movement) – the point is to consider this object under study *in relation to* 1) dominant trends as well as counter-trends, and 2) multiple groups of actors that can be positioned differently towards these trends. Ideally, a power in transition analysis includes a diverse selection of cases (i.e. regimes, niche-regimes, and niches, both radical and moderate), and a background analysis of relevant landscape trends (including dominant trends and counter-movements), in order to be able to study how these cases exercise power, and how they interact and relate (to each other and to the landscape). The 'background analysis' of landscape developments can take various forms, ranging from discourse analysis to trend analysis, to a short historical overview, as long as it not only describes dominant trends, but also pays attention to undercurrent (counter-)movements.

Once the cases have been selected and the background landscape analysis has been conducted, one can analyze selected actor groups/initiatives who have transformative sustainability ambitions, by asking the following main questions (see table below). The questions marked with an asterisk* are ‘new’ in comparison to the questions proposed in chapter 3 (summarized in section 9.1.1). While the power-in-transition framework is for a large part based on the conceptualization of power as proposed in chapter 3, it also includes new dimensions and concepts, which have been added and discussed in chapter 7. The most important aspect of all these questions is the study of the dynamic power interaction between different groups of actors over longer periods of time, rather than merely ‘characterizing’ them in terms of the Multi-PIT at a particular moment in time. That is what makes it a *power-in-transition* analysis.

Question 1. What are the transformative sustainability ambitions?
<ul style="list-style-type: none"> • Which (different) ambitions do the initiatives have? • Which power relations are envisioned in these ambitions (power as substantive issue)? * • How do these ambitions relate to the dominant landscape trends and counter-movements? * • Which initiatives can be characterized as ‘radical’, and which as ‘moderate’? * • Which functional system boundaries are reproduced or challenged in these ambitions? *
Question 2. How is power exercised?
<ul style="list-style-type: none"> • Which types of power are exercised: innovative, transformative, reinforcing and/or systemic? • Which types of resources are mobilized? • Is the exercise of power passive or active; does it include mobilization of physical resources? * • What are the power relations between different actor groups? (typology of power relations) • What are the power dynamics between different actors groups? (synergetic vs. antagonistic)
Question 3. Who is (dis)empowered and how?
<ul style="list-style-type: none"> • How/ to what extent are the conditions of power met? (access, skill, strategy and willingness) • What is the level of intrinsic motivation? (sense of impact, choice, competence and meaning) • Which interpretive styles prevail? (style of attribution, evaluation and envisioning) • To what extent is the organizational setting empowering? (hierarchical vs. empowering setting) • Who is (dis)empowered, what are the (dis)empowerment paradoxes? (critical theory) • To what extent are the discourse(s) used (dis)empowering? * • What are actors’ (implicit) perspectives on the <i>ethics</i> of their power exercise? *

Table 27. Questions to be asked about cases in a power-in-transition analysis

In addition, the original question on ‘transition potential’ (see section 9.1.1) can be expanded by ‘inverting’ the hypotheses into questions to be asked about initiatives under study (finalized, ongoing, or planned), using these to critically discuss whether and to what extent these initiatives had, have, or will have ‘transition potential’ (see table below). These questions on transition potential are not separate from the previous questions on ambitions, power, and empowerment. Rather, these questions recapitulate and synthesize all the answers to the previous questions, and evaluate these in terms of the ‘overall’ transition potential of initiatives. I hypothesize that *the extent to which* these questions can be answered affirmatively, for any particular initiative, indicates the extent to which these initiatives have transition potential (i.e. the capacity to contribute to sustainability transitions).

Evaluating 'transition potential' by questioning to what extent the initiative does/did/will...
<i>Question 1:</i>
... draw on the collective exercise of transformative power, i.e. do they involve social (counter-) movements and 'radical' groups of actors that challenge dominant trends at the landscape level?
<i>Question 2:</i>
... interact with diverse groups of actors: regimes, niche-regimes, and niches, both radical and moderate, both passive and active?
<i>Question 3:</i>
... have independent, cooperative, and antagonistic power relations with other niches, niche-regimes, and regimes?
<i>Question 4:</i>
... exercise power in an active way (i.e. mobilize physical resources), and does/did/will that facilitate the active exercise of power by radical niche-regimes?
<i>Question 5:</i>
... use transformative sustainability discourse to engage with regime discourse, while also challenging this regime discourse? Is the temptation resisted to institutionalize and formally impose this discourse in a top-down manner?
<i>Question 6:</i>
... involve participants with a sense of power and the willingness to exercise power to exercise it to achieve their transformative sustainability ambitions? Do they (know how to) deal with the inherent ethical dilemmas of such exercise of power?
<i>Question 7:</i>
... strive for sustainable power relations, both now and in the future; are they oriented towards the intrinsic motivation of individuals, and aware of the limits of 'social thresholds'?

Table 28. Questions to evaluate the transition potential of initiatives

Alternatively, one can invert the logic; rather than using the hypotheses to question the transition potential of initiatives, one can analyze and compare historical and ongoing initiatives to 'test' these hypotheses. This is not necessarily about 'falsifying' or 'validating' the hypotheses through case-analysis, but may also be about exploring the extent to which these hypotheses, notions, and proposed questions are useful guidelines to discuss and interpret sustainability initiatives. And if they are not found to be useful, which notions might need to be replaced, or which other issues and dimensions should be added.

At the end of chapter 7 I have argued that there are several ways in which the power-in-transition framework can be applied. One option would be to 'test' and 'adapt' the hypotheses, by testing to what extent they accurately explain or predict the 'transition potential' of initiatives. This would require comparative research between a large number of ongoing initiatives, as well as an ex post evaluation of the extent to which these initiatives did contribute to sustainability transitions, including quantification of indicators, statistical data-collection and analysis, ex post longitudinal, historical and comparative analysis of past initiatives. This would obviously require considerable specification and operationalization of concepts, hypotheses and research questions into quantifiable indicators to 'measure' the transition potential of an initiative (e.g. amount of physical and monetary resources mobilized over an x amount of time, or survey indicators to count amount of resources that participants are willing to invest in the initiative to

reach a particular goal, etc). However, the power-in-transition framework is more suitable for *interpretative* and *qualitative* analysis. Therein the purpose is not to ‘test’ hypotheses, nor to ‘measure’ the transition potential of ongoing initiatives in absolute terms, but rather to describe, deconstruct, and ‘reconstruct’ how actors (try to) exercise power to realize transformative ambitions. Or in other words, this would be the same kind of research that was done in this thesis, but it would do so in a less exploratory way, asking more specified questions in a more structured manner. At the end of chapter 7 I briefly specified what type of research this would entail. Moreover, I also discussed how the power-in-transition framework differs from existing approaches to power as found in transition studies, and also how they could complement one another.

9.1.4. How can power be integrated in the transition management model?

The answer to this question has been given in chapter 8. In that chapter I integrated insights on power and empowerment to discuss the prescriptive TM-model and to propose ways to increase its empowering potential. First, I used insights on discourse, power, empowerment, and action research to discuss challenges in attempts to apply transition management ideas, as observed in the cases under study. A summary of these *insights* and *lessons* can be found in tables 30 and 31 (see next pages). Based on these insights and lessons, as well as on the theoretical hypotheses of power-in-transition, I formulated power and empowerment *principles* for transition management, in which I distinguished between *designing a new process* and *adapting an ongoing process*.

Themes	TM Principles for Designing New Processes	TM Principles for Adapting Ongoing Processes
Intrinsic Motivation	Involve participants with intrinsic motivation to realize a transition	Increase intrinsic motivation of incumbent participants
Power diversity	Involve both moderate and radical actors	Link incumbent participants to other groups of actors (moderate& radical)
Conditions of power	Ensure that the conditions of power are met	Focus on using the conditions of power that are already available
Exercise of Power	Enable both passive and active exercise of innovative and transformative power	Focus on making optimal use of the types of power exercise that are available
Power Relations	Ensure power relations of independence and cooperation	Increase independence and cooperation
Power Dynamics	Ensure a balance between antagonistic and synergetic power dynamics	Counterbalance dominant power dynamics by linking moderate to radical groups
Organizational Setting	Create an empowering setting and avoid hierarchical structures	Work within and around existing hierarchical structures
Systemic Power => sustainability vision	Ensure a broad vision on sustainability	Broaden one-sided visions on sustainability
Power as a substantive issue	Treat sustainable power relations as a substantive issue	Trigger debate on (un)sustainable power relations
Ethics of Power	Develop context-specific perspective on ethics of power	Trigger debate on the ethical consequences of power exercise

Table 29. Power and empowerment principles for transition management

Observed Challenges	Discourse Insights	Power Insights	Empowerment Insights	Action Research Insights
Participants struggled with transition terminology	Participants found transition terminology vague, abstract and difficult to understand. Participants associated TM-terminology primarily with long-term, process, reflective and normative sustainability ideas > did not see how these could be linked this to short-term action and objective economic targets	'Niche versus regime' discourse was used to reinforce unequal power relations => confirmation of dominant position of 'regime-actors' as a 'given' rather than something to be overcome => fear that involving 'niche-actors' might weaken project and/or upset 'regime-actors'	Transition terminology had negative impact on intrinsic motivation: 1) imposed > negative impact on sense of <i>choice</i> , 2) overly ambitious > negative impact on sense of <i>impact</i> and 3) highly abstract > dependent on experts that could 'explain' terminology > negative impact on sense of <i>meaning and competence</i>	Attempts by TM-action researcher to 'explain' TM-philosophy and to contrast it with 'normal' project management, confirmed dichotomous associations with TM. Tendency of action research to use TM-terminology > difficulty of participants to relate TM to own experiences
Participants were reluctant and/or incapable of applying transition management (TM)	Philosophy of TM requires paradoxical and contradictory thinking > difficult to grasp. Integrative thinking (short <i>and</i> long-term, process <i>and</i> content, doing <i>while</i> reflecting) > tension with 'either-or logic' and human tendency to think in dichotomies and categories	Power relations > one-sided dependence on business stakeholders, steering boards & commissioning authorities who impeded application of TM. Focus on passive power and synergetic power relations and fear of active power and antagonistic power relations	Lack of intrinsic motivation to apply TM. 'Fear' of risks & responsibilities, enforced by hierarchical context => TM imposed through mechanisms that enforce extrinsic motivation. Lack of support on how to apply TM in specific project context	Lack of concrete techniques and tools to apply TM in specific context. Emphasis of TM action-researchers on 'full-fledged TM process' scared off managers pressured to get project results within limited time and resources
'Transitioning' ongoing process disrupted and / or fragmented program and project activities	Integrative aspect of TM-discourse was lost > used to <i>counter-balance</i> prevailing short-term, economic focus > equated to 'choosing sides' in favour of environmental aspects and long-term goals, and 'against' short-term and economic concerns.	Internal power struggles between participants and competition between different process models => TM seen as a threat to (other) process models and (other) process advisors and researchers	Prescribed TM-focus on frontrunners > involvement of outsiders > fragmentation of project + suggestion that ongoing process + incumbent participants were 'not innovative enough' > negative impact on sense of impact and competence	Emphasis of TM action-researchers on 'full-fledged' TM process suggested need to transition entire project / program > resistance against doing so led managers and participants to marginalize TM in separate trajectories and subprojects

Table 30. INSIGHTS on empirically observed challenges in the application of TM.

Observed Challenges	Discourse Lessons	Power Lessons	Empowerment Lessons	Action Research Lessons
Participants struggled with transition terminology	Rather than contrasting TM-approach to 'normal project management' (i.e. enforcing dichotomous associations) , use accessible 'small' insights and participative tools to allow participants to <i>experience</i> TM-ideas	Use discourse on 'niches and regimes' to engage with regime-players in a different way, approaching them as potential 'enlightened regime-players' or 'niche-players within the regime'	Consider whether transition concepts are considered useful by participants <i>themselves</i> ; translate transition-terminology into context-specific local language; present TM-tools that participants can use to deal with context-specific challenges	Apply existing TM-tools to allow participants to experience the ideas of TM, and/or (when necessary) make use of other more simplified participatory tools that introduce participants to the idea of long-term transitions and the notion of sustainability
Participants were reluctant and/or incapable of applying TM	Be ware of human tendency to think in dichotomies and categories and avoid TM becoming categorized one-sidedly as vague, long-term and focused on normative issues; instead emphasize its pragmatic and action-oriented potential	Provide concrete financial, legal and political advice on how to gain the necessary independence to apply TM. Emphasize active exercise of power, antagonistic power relations and involvement of civil society as necessary conditions for TM.	Encourage intrinsic motivation (i.e. participants must feel they chose TM). Rather than one-size fits all workshops on TM, focus on individual training and practical advice on how to deal with context-specific dilemmas that come up at the operational level	Provide concrete techniques and suggestions on how to deal with financial, legal and political barriers that participants face > i.e. integrate financial, legal and political expertise in the TM-model + empirical examples of best practices
'Transitioning' ongoing process disrupted and/or fragmented program and project activities	Use participative tools to apply TM ideas in ongoing process; demonstrate that TM does not require participants to abandon their own ideas and approaches, but rather that TM can 1) facilitate integration of <i>ongoing</i> activities and 2) link these to societal sustainability transitions	Present TM as a powerful meta-approach that helps to integrate and combine other process approaches used in ongoing process. Avoid competition with other process models / other process advisors and researchers	Focus on competences that incumbent participants do have, rather than on those they lack. Present TM as tools that <i>incumbent</i> participants can use. Use TM-tools beyond mere 'participation'; i.e. use TM to facilitate interpretative processes that are necessary for intrinsic motivation	Cooperate with other researchers and advisors in a project to develop and apply participatory tools and financial, legal and political insights. Absorb and extend the insights and experiences of other researchers and advisors, rather than 'competing' with them

Table 31. LESSONS on empirically observed challenges in the application of TM.

Subsequently, I aimed to operationalize these insights, lessons, and principles on power and empowerment, by developing two participatory tools to be used in a transition management process: a ‘power tool’ and an ‘empowerment tool’. Whether these power and empowerment tools will actually work in a participatory practice remains to be tested in future research project, in the same way that other transition management instruments have been developed, applied, tested, and adapted in practice (to be discussed further in section 9.3. on challenges for future research).

The **power tool** is based on using the power-in-transition framework in a ‘participatory setting’, in order to help practitioners (with a transformative sustainability ambitions) in order to to; 1) position themselves (their project, program, department, organization, network etc) within their contextual power field; and 2) develop a power *strategy* for achieving their ambitions. I described the different elements of the power tool as four consecutive and separate ‘steps’, through the metaphor of ‘using a map’:

Step 1. Designing a power-in-transition map

Step 2. Positioning oneself on the map

Step 3. Developing a power strategy to ‘navigate’ through the map

Step 4. Ethically justifying the power strategy

The first two steps involve a participatory discussion of questions such as: What are the dominant trends at the landscape level relevant to our ambition, and what are the counter-movements? What are the most important initiatives in our field, and how can these be positioned towards these landscape trends? How do we relate to this field? Are we moderate or radical, i.e. do we want to play into dominant trends, and/or into undercurrent counter-movements? What kind of power do we *want* to exercise? Do we want to focus (only) on the passive exercise of power (e.g. mobilizing ideas, planning, visions, conceptual tools), or do we (also) want to exercise power in an active way, i.e. mobilize physical resources to materialize our ideas and visions?

The third step – developing a power strategy – consists of participants discussing and answering the following questions (see table below):

Power Exercise
<ul style="list-style-type: none"> • Which types of power exercises are necessary to attain our goal? • Which types of power can we (not) exercise? • Is the power that we can or want to exercise really ‘enough’?
Resources and Conditions of Power
<ul style="list-style-type: none"> • Which resources do we need and which resources can we (not) mobilize? • Which necessary skills do we need and which do we (not) have?
Power Relations & Power Dynamics
<ul style="list-style-type: none"> • Which other (groups of) actors do we need to complement us? • Which other (groups of) actors do want to enable or resist, cooperate or compete with? • What kind of dependence relations do we want or need with other groups of actors? • How do we ensure our independence?

Table 32. Participatory questions for developing a power strategy

The fourth and final step is about critically reflecting upon one’s power exercise; not only before exercising it, but also during and after. How can one’s exercise of power be ethically justified? Which ethical perspective does one uphold and how does this relate to one’s ambitions, power relations, and power deeds? One guide for this reflection is the following ethical perspectives on the exercise of power (see table below, as discussed and formulated in chapter 7, section 7.4.):

Different Ethical Perspectives on Power
<ul style="list-style-type: none"> • Power is justified through its ends (consequentialist ethics) • Power is justified through the person exercising it (virtue ethics) • Power is justified through the way in which it is exercised (deontological ethics)
Possible Ethical Principles for Exercising Power
<ul style="list-style-type: none"> • The exercise of power should serve desirable goals • Power should never be a goal in itself • People should always be treated as ends and never only as means
Possible Ethical Principles for Exercising Power for a Sustainability Transition
<ul style="list-style-type: none"> • The exercise of power to enable transitions should serve sustainability • Both transitions and power should not be goals in themselves • We should strive for sustainable power relations, both now and in the future

Table 33. Different possible ethical perspectives on power

In principle, the power tool can be used as ‘open process questions’ to be answered and decided upon by the participants themselves. However, a transition manager/ action researcher can also use the *hypotheses* on power in transition, and the *principles* for transition management, to provide participants with suggestions on how to increase the transition potential of their initiative in power terms. In chapter 8 I discussed how the ‘power tool’ can be used to complement different phases and instruments in a “transition management cycle”. This is summarized in the figure below.

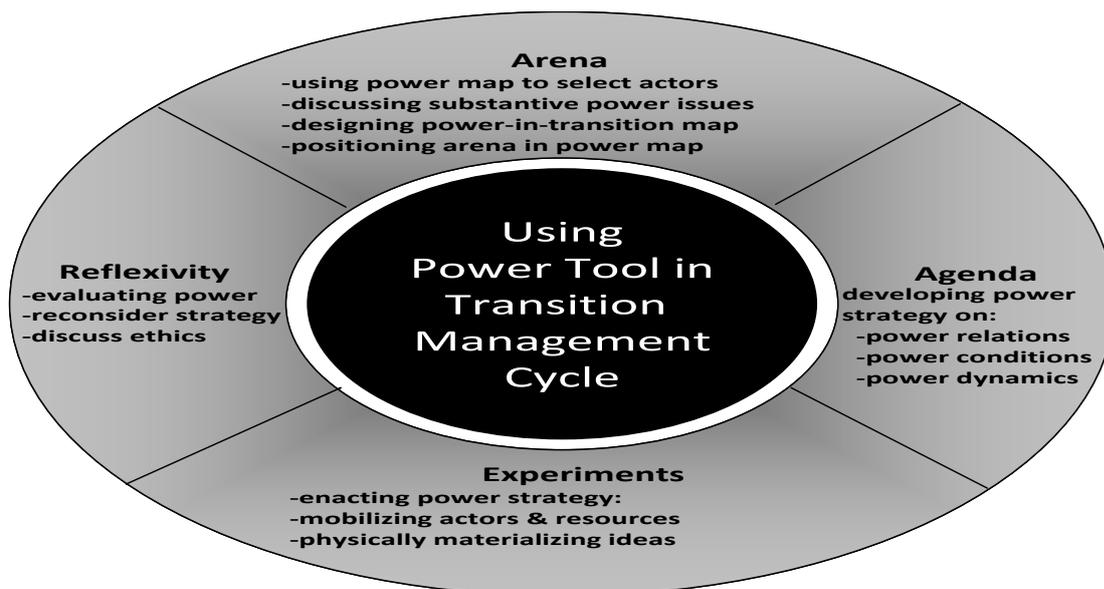


Figure 23. Using the power tool in the TM-cycle

In addition to the power tool, I presented an **empowerment tool** that operationalizes concepts on organizational culture and intrinsic motivation (presented in chapter 3) for participatory use. The tool consists of three ‘steps’:

- Step 1. Creating an empowering organizational set-up and attitude*
- Step 2. Assessing the intrinsic motivation of individual participants*
- Step 3. Increasing the collective intrinsic motivation of a group of actors*

The first step is about designing and/or (re)considering the organizational setting of a particular initiative (e.g. project, program, organization, department, or ‘transition arena’). The contrast between a hierarchical organizational set-up versus an empowering setting, as provided in management studies (see chapter 3, 3.3.2), is used for discussion with practitioners about how to create an empowering organizational setting. How do we, as a group, want to organize ourselves in terms of decision-making power? Who takes decisions, and how do we account for those decisions? How do we deal with hierarchical structures when dealing with our commissioning authority and/or home organizations and departments? It is also important to make sure that participants are aware of and prepared for the possible disadvantages of an empowering setting, since this also implies taking more individual responsibility, and risk (political, financial, and career-wise).

The second step is for a transition manager/ process manager/ action researcher to assess the intrinsic motivation of individual participants regarding their own activities within a particular initiative. The table below provides guidelines for such assessment:

Assessing to what extent practitioners have positive task assessments about their daily activities:	Assessing whether and to what extent practitioners have positive task assessments regarding a specific sustainability transition ambition:
Impact: ‘I can make a difference’	‘I contribute to a sustainability transition’
Competence: ‘I am good at what I do’	‘I have competences to contribute to sustainability’
Meaning: ‘I care about what I do’	‘I care about contributing to a sustainability transition’
Choice: ‘I can determine what I do’	‘I can determine how I contribute to sustainability’

Table 34. Assessing intrinsic motivation/ positive task assessments of participants

Such ‘assessment’ can be conducted through interviews, surveys, or group discussion. The purpose of this exercise is to identify the ‘empowerment needs’ of a group of actors, and to use the outcome of the assessment to further facilitate these empowerment needs.

The third step is to *increase* the intrinsic motivation of participants, by enabling positive task assessments and facilitating positive interpretative styles. This is partly done by moving *beyond individual* task assessments (either negative or positive) towards *common* positive task assessments regarding the ambitions of the initiative:

- Impact: ‘**WE** contribute to a sustainability transition’
- Competence: ‘**WE** have competences to contribute to sustainability transitions’
- Meaning: ‘**WE** care about contributing to a sustainability transition’
- Choice: ‘**WE** can determine how we contribute to a sustainability transition’

The transition manager/ action researcher can facilitate this by sharing the outcomes of the individual assessments with the group, in terms of identifying how participants *complement* one another in their positive task assessments. This in itself may increase the collective intrinsic motivation of a group of actors. Moreover, this can be further increased by facilitating *interpretative processes* that foster positive task assessments, i.e. facilitating the group of actors to 1) attribute cause and effect in such a way that they can recognize their impact on the societal system, 2) evaluate failure and success in such a way that they recognize their competences, and 3) envision future events in such a way that they can recognize their choices and the meaning of what they are doing. At the end of chapter 8 I specified how existing instruments offered in the transition management literature (e.g. integrated system analysis, scenario exercises, monitoring tools, and experimentation tools) help to facilitate such interpretative processes. As such, the empowerment tool is not entirely a new or separate tool. Rather it complements other TM-tools used in a transition management process. Moreover, the empowerment tool helps to specify how these other TM-tools can be used to empower practitioners.

9.2. MAIN NEW INSIGHTS AND SCIENTIFIC CONTRIBUTIONS

In this section I discuss the main insights of this research in terms of their scientific contribution, not only to the field of transition studies, but also to social theory and sustainability science more generally. I will not discuss state-of-the-art literature on power and transition (management), as I have already extensively done that in chapters 2, 3, 7 and 8. Rather, I will briefly mention and discuss what I believe to be the four main scientific contributions of this dissertation, which are related to the following themes:

- *Power and transformative capacity*
- *Power in transition*
- *Empowerment beyond participation*
- *Power as a substantive sustainability issue*

9.2.1. *Power and transformative capacity: contribution to social power theory*

Although the conceptualization of power as offered in this dissertation has been specifically designed for doing research on sustainability transition, I do believe that several elements can contribute to power theories more generally, as found in social science literature. The first contribution is the conceptualization of ‘innovative power’. While much of the literature approaches power in relation to the *existing* distribution of resources, I have argued that the invention and creation of *new* resources can be seen as a distinct form of power exercise that significantly alters dependence relations.

The second contribution is a *horizontal typology of actor-specific power exercise*, i.e. the distinctions between innovative, transformative, and reinforcing power. Many power typologies offered in the literature tend to be ‘vertical’ and focused on power as manifested at different levels of aggregation (i.e. actors, institutions, structures, systems etc). In contrast, my typology is ‘horizontal’, in the sense that all the distinguished forms

of power exercise focus on the level of actors. Even though the concept of systemic power as the collective exercise of power does involve a higher level of aggregation, it is still exercised *by actors* and not 'by systems'. This horizontal and actor-specific typology shifts the focus of analysis to the dynamic interaction between the different ways in which actors exercise power through time, rather than focusing on the distinction and interaction between actors, structures, and institutions at a specific point in time. This does not mean that the power typology ignores or circumvents the many insights on structural and discursive power. On the contrary, the typology serves to distinguish different ways in which actors deal with such structures and discourses, by either reproducing or challenging them.

Third, while many power debates revolve around the question of whether power is a 'capacity' (power to) or a 'relation' (power over), I have related 'power as a capacity' to *three forms of power relations*: 1) A having power over B, 2) A having *more/less* power than B and 3) A having a *different* kind of power than B. The important point about this distinction is that although these different types of power relations can coincide, they often do not, and one power relation does not *necessarily* lead to another. The fact that A (e.g. a large multinational) has *more* power than B (e.g. a small entrepreneur) does not mean that A also has power over B. In fact, by exercising a *different* kind of power, e.g. by exercising innovative power and creating new resources, B can have access to a new resource to which A has no access, and thereby B (e.g. the small entrepreneur) can exercise a certain amount of power over A (e.g. a large multinational), even if B exercises less power than A. Moreover, each type of power relation can manifest itself in a different way, which has been captured in a *typology of power relations*, including distinctions between i) one-sided dependence, mutual dependence, and independence, ii) competition, cooperation, and co-existence, and iii) antagonism, synergy, and neutrality. This typology can be used to systematically study the multi-dimensionality of power relations, and to 'unpack' simplistic images of the interaction between 'powerful' and 'powerless' actors, by acknowledging that both sides not only have more or less, but also a *different* kind of power, which they can use to relate to others in multiple ways.

Last but not least, I have provided a conceptualization of power that can itself be 'empowering', not only by making it actor-specific, but also by explicitly including the *transformative capacity* of actors. As extensively discussed in chapter 3, many notions of power tend to privilege stability over change, and structure over agency. Even those who do emphasize the possibility of agency and change (e.g. Giddens) still approach *power* primarily as being dependent on (the capacity to use) *existing* resources, *existing* institutions, and *existing* structures of domination. By conceptualizing the capacity to develop *new* resources and *new* institutions as a specific form of power (i.e. innovative and transformative power), the transformative capacity of actors gains a new dimension that is not entirely dependent on using existing resources and institutions.

9.2.2. Power-in-transition: contribution to transition studies

The main scientific contribution of this thesis has been oriented towards 'powering' transition studies and 'empowering' transition management, by developing an analytical

power-in-transition framework (Multi-PIT), generating hypotheses on power in sustainability transition, formulating power and empowerment principles for transition management, and developing a participatory ‘power tool’ and a participatory ‘empowerment tool’. I will not repeat why this was believed to be necessary, nor how this was done, for this was already extensively discussed in earlier chapters and summarized in the previous section (9.1). I do, however, want to briefly discuss some additional ways in which the power-in-transition framework contributes to the field of transition studies.

First, the Multi-PIT framework complements existing analytical frameworks in transition studies that focus on ‘socio-technical innovation’ and/or ‘functional subsystems’. The power-in-transition framework serves to draw more attention to the relation between radical innovation, antagonism, and counter-movements. Event though transition studies has often been positioned as the study of ‘radical’ innovation and transformation, I argue that so far it has mostly focused on the interaction between relatively *moderate* niches and regimes, and dominant landscape trends, while underplaying the antagonistic role of radical niches and counter-movements. I argue that this mostly has to do with the ‘black box’ of the landscape level. Dominant trends and engrained paradigms are typically placed at the landscape level as exogenous factors that are imposed onto regimes, niches, and actors. Landscape developments supposedly put ‘pressure’ on existing systems, regimes ‘adapt’ to these developments, and niches ‘play into them’. But what about the collective power of actors (e.g. social movements) to *influence* and *create new* landscape trends, with new paradigms and new functional systems? I argue that, in the study of sustainability transitions, this should be an explicit research question at the least, to be answered both theoretically and empirically.

Second, the framework also implies a reconsideration of the very notion of a ‘societal transition’. In power terms, I propose to conceptualize a societal transition as a combination of synergetic and antagonistic power dynamics between passive and active, and moderate and radical groups of actors, in which the systemic power of undercurrent counter-movements increases while the systemic power of dominant trends decreases. This conceptualization of a transition differs from the current conceptualization of societal transitions as offered by Rotmans and de Haan (2011). The main difference is that I contend that ‘regime replacement’ within a specific functional subsystem is *not* a sufficient condition for a societal transition to occur. Rather, I argue that a societal transition requires that something also changes at the *landscape level*, i.e. that the collective exercise of power to *alter* landscape trends is increased. As such, a social transition *within a specific subsystem* (i.e. region or sector) requires a *repositioning* of the subsystem regarding landscape trends.

Third, I have argued that when we are dealing with *sustainability* transitions, we have to acknowledge that the notion of sustainability is inherently about the (global) interaction between different subsystems, not just about the survival chances of an individual subsystem. As such, when studying sustainability transitions within specific subsystems, this includes exploring the extent to which the transitioning of these subsystems has contributed to a ‘greater sustainability transition’, including sustainable power relations between different subsystems (e.g. global geo-political relations between first, second,

and third world regions). While evaluating which landscape trends are sustainable or unsustainable is inherently subjective and normative, we can still analytically define a sustainability transition as a process in which dominant landscape trends that are believed to be ‘unsustainable’ are challenged, while counter-trends that are believed to be ‘more sustainable’ are strengthened. Obviously, transitions within individual subsystems can never entirely ‘replace’ dominant landscape trends, for those landscape trends are – by definition – globally shaped by many other subsystems as well. However, when we conceptualize a ‘global sustainability transition’ as a long-term process in which unsustainable landscape trends are ultimately replaced by more sustainable counter trends, we can conceptualize sustainability transitions within individual subsystems as gradual steps within this replacement. As such, in order to study sustainability transitions within societal subsystems we need to explore how change within these societal subsystems contributes to change at the landscape level. The analytical power-in-transition framework serves to facilitate such research on sustainability transitions.

Fourth, the framework responds to several authors who have called for more attention for civil society, grassroots innovations, and social movements in transition studies (Seyfang and Smith 2007, Smith 2005, 2007, Haxeltine and Seyfang 2009, Avelino and Kunze 2009). However, rather than only studying these phenomena in terms of ‘radical niches’, the power-in-transition framework helps to also consider the systemic power of social movements, i.e. their collective (and often transnational) exercise of transformative power at the landscape level. Moreover, from the perspective of this framework, grassroots organizations and civil society networks are not always ‘radical niches’ that only develop new resources (i.e. innovative power). They can also be seen as ‘radical niche-regimes’ that also develop new institutions (i.e. transformative power). As such, in addition to Smith’s (2006, 2007) work on how radical niches are ‘mainstreamed’ through cooperation with (or absorption by) regimes, I propose to also research how radical niches can (and do) cooperate with (radical) niche-regimes. The framework will thus help researchers to go beyond the study of how social movements ‘resist’ or ‘challenge’ existing regimes, by also studying their more constructive efforts to actually create new, alternative regimes.

9.2.3. Empowerment beyond Participation: contribution to sustainability governance

An additional scientific contribution of this dissertation has been the conceptualization of empowerment as an alternative to, or extension of, the concept of ‘participation’. In the literature on sustainability governance, there is a lot of focus on ‘participation’, e.g. how to ‘involve’ citizens, how to organize ‘participatory’ processes, and how to make technocratic debates more ‘inclusive’ and ‘democratic’ (e.g. Stirling 2008, Meadowcroft 2009, 2002, Hendriks 2009). This dissertation contributes to these discussions by providing insights from organizational psychology on empowerment, in terms of intrinsic motivation and positive task assessment. These insights explain what often goes wrong with ‘participation’ processes; while participation often revolves around giving people a sense of ‘choice’, i.e. giving them a ‘voice’ by involving them in decision-making processes, this is not at all sufficient to ‘empower’ people. Empowerment also requires providing them with a sense of impact, meaning and competence.

Moreover I argue that gaining such sense of impact, meaning, and competence also requires material ownership and mobilization of *physical resources*, e.g. an alternative technology or a piece of land. In debates on sustainability governance there is a lot of critique of ‘technocracy’ and ‘technology fix’ – with which I agree – but in that critique authors sometimes tend to emphasize social, organizational, and cultural aspects *at the expense of* more technological and geographical aspects. I argue that the problem with such technocratic approaches to sustainability is not so much the focus on physical matters or technology in itself, but rather the failure to deal with the issue of *who actually owns* these physical resources. I argue that empowering citizens to achieve sustainability in their own environments also requires them to have more access to physical, i.e. technological and natural resources. Such access can be attained by actions such as creating their own new resources (innovative power), or developing new financial and institutional arrangement (transformative power) that allow them to purchase and *own* physical resources (e.g. through user cooperatives or joint purchasing initiatives). This ‘empowers’ citizens in terms of making them less dependent on existing regimes.

The concept of empowerment also provides an important critical perspective on sustainability discourses and environmental governance. In an era of ‘sustainability’ discourse, the first P of the people-planet-profit-balance is often forgotten as discussions sink into quantitative squabbling over cost-benefit analysis and trade-offs between ecological and economic targets. A reorientation towards the *empowerment* aspects of ‘sustainability’ would give a deeper meaning to the ‘people’ aspect of sustainability. Besides democratic concerns and other moral grounds, the ‘empowerment of people’ as an *end in itself* also has instrumental benefits; since the idea that one is actually doing something ‘for people’ can heighten intrinsic motivation, and thereby contribute to a willing accomplishment of ‘sustainability ambitions’. This brings me to the next issue.

9.2.4. Power as Substantive Sustainability Issue: contribution to sustainability science

Perhaps the most important insight of this research is the conceptualization of ‘sustainable power relations’ as a notion which enables us to treat power as a *substantive* part of sustainable development. In many discourses on sustainability – both scientific and political - there is a tendency to treat power as a *process* issue, i.e. as a means to reach environmental and economic goals. Therein the social aspect of sustainability is undermined compared to the ecological and economic aspects. I argue that sustainable power relations are *inherent* to the concept of sustainability. If we can agree that many of the current power relations are not sustainable, then it follows that a transition to sustainability by definition requires *a transition to sustainable power relations*. The role of power and empowerment in sustainability transitions is not only about ‘empowering people’ to organize sustainability transitions, the *empowerment of people is in itself a sustainability transition*.

As such we need to conceptualize and communicate the idea of ‘sustainable power relations’. I have used the concept of intrinsic motivation (Thomas & Velthouse 1990) to conceptualize a ‘sustainable power relation’ as a relation in which the choices and efforts of actors do not depend on supervision, punishment, or rewards by others, but rather

come forth from positively valued experiences that individuals derive directly from their activities, resulting from cognitions about their activities that produce motivation, meaning, and satisfaction. I have argued that many environmental regulations (either those in place or those proposed for the future) are inherently based on the mechanism of *extrinsic* motivation, e.g. ‘punishing’ and/ or ‘rewarding’ people towards desirable behavior through ‘pricing’ or ‘taxing’ policies. The problem with extrinsic motivation is two-fold; not only does it make people *dependent* on supervision and rewards, but the effectiveness of this supervision and reward also *wears off with use*, as individuals either get used to it or find ways to manipulate it. This means that when we extrinsically motivate others to do something, and want to keep doing so, we have to constantly *increase* the level of supervision and awards. The possible strength of conceptualizing sustainable power relations in terms of intrinsic motivation (as opposed to extrinsic motivation) is that it does not only have a normative dimension (e.g. avoiding dependence, domination, or unequal relations), but that it can also be used as an *instrumental* and economic argument. Environmental regulations based on extrinsic motivation are not only ‘unsustainable’ in terms of creating new dependence relations and centralized structures of domination, they may also simply be ineffective and inefficient on the long-term, in the sense that higher levels of supervision and awards require an increasing use of resources, including time, money, employment, and technology. A situation in which business-actors and citizens need to be continuously ‘awarded’ and ‘supervised’ by government in order to choose for sustainable behavior, can thus be described as ‘unsustainable’, not only socially but also economically.

In addition to sustainable power relations being based on intrinsic motivation, I have also proposed the notion of ‘social thresholds’ to conceptualize ‘the limits of power’. This was partly a response to scientific publications in *Nature* and *Science* that speak of ‘the breaching of ecological thresholds’ (Rockström et al. 2009) and propose international institutions and regulations to avoid such further breaches of ecological thresholds (Walker et al. 2009). I have referred to Parsons’ conceptualization of power as a phenomenon that can be compared to money, in the sense that it loses value when there is too much of it (i.e. inflation). Based on that idea I argued that in analogy to ‘ecological thresholds’ there might also be such a thing as ‘societal thresholds’. In the same way that we need to be careful in the use of natural resources by respecting nature’s pace and the time it needs to regenerate itself, the use of power also has a ‘delicate balance’, in which a great deal of time is necessary to create its basis of trust and legitimacy. Parsons’ concept of power helps to explain, in economic and systemic terms, that even though power is not ‘zero-sum’, there is definitely a limit to its use. International WTO-like institutions enforcing environmental regulations (as proposed by Walker et al. 2009) would not be effective if they are not morally supported by *a majority* of the global community. Such an enforced global order might even have counterproductive effects in terms of *decreasing* the effectiveness of power exercise. Just as in the process of inflation money loses its value, power also loses value when it is ‘overused’.

Despite Parsons’ functionalist approach, an approach which I have criticized throughout this research, I would still argue that Parsons’ functionalist and systemic perspective on

power is useful when we are dialoguing with scientists and policy-makers who think in these functionalist terms. Much of the environmental debates on climate change and other ecological thresholds are based on an inherently functionalist worldview. It is important that power theorists and other social scientists scrutinize this functionalist worldview and question the tendency to translate scientific results about the functioning of societal and ecological systems into technocratic policy suggestions. However, *while* doing that, we can also argue that *even within the functionalist* worldview there are limits to power and institutionalization. The attention to environmental degradation is surrounded by a discourse of ‘urgency’, which currently particularly manifests itself in the climate change debate. It seems to be accepted that this urgency justifies increasing calls for environmental regulation and international institutionalization. Given this perceived sense of urgency, there is no time or space to explain to environmental scientists and policy-makers what Foucault or other sophisticated social theorists have to say about the complexities of power. Rather we must (also) ‘translate’ our worries in functionalist and economic terms, and warn scientists and policy-makers that the breaching of ‘social thresholds’, through top-down regulation and overly centralized institutions, might be just as disastrous as the surpassing of ‘ecological thresholds’, and that sustainable power relations are necessary to safeguard ecological and economic sustainability in the long-term.

9.3. REMAINING QUESTIONS AND CHALLENGES FOR FUTURE RESEARCH

The role of power in sustainability transitions is a vast theme. Obviously there are many remaining questions and challenges for future research. In this section I focus on discussing some of the most important remaining questions that are directly related to the issues brought up in this dissertation:

- *Ethics, democracy, and political theory in sustainability transitions*
- *Psychology, education, neuroscience, and personal transitions*
- *Geography, scaling issues and government levels*
- *Participatory tools and action research*
- *The power of civil society and the transition to sustainable communities*

9.3.1. Ethics, political theory, and democracy in sustainability transitions

Although in chapter 7 I touched upon the issue of ethics, and made a first attempt to identify different ethical perspectives on the exercise of power in the name of sustainability transitions, these perspectives still need to be properly embedded in ethical philosophy and political theory. While idealistic sustainability discourses tend to emphasize the well-being of both current and future generations and the ‘balance’ between social, economic, and ecological concerns, the daily realities of sustainability politics in fact imply considerable trade-offs between different priorities; short-term gain versus long-term concern, poverty versus climate change, equity versus differentiation, individual quality of life versus societal sustainability, freedom versus duty, bottom-up initiative versus top-down regulation, and so on. Although it remains essential to

deconstruct these dichotomies by emphasizing their interrelation (e.g. “climate change may aggravate social inequalities, so dealing with the former in the short term is necessary to deal with latter in the long term”), I argue that it is equally important to acknowledge and analyze the trade-offs that are perceived in practical reality, and to discuss their ethical implications. This requires an in depth discussion of points of contestation on ethics as found in political philosophy, distinguishing consequentialist, deontological, and virtue ethics, Machiavellian principles versus Kantian principles, anthropocentrism versus ecocentrism, and so on. These different approaches to ethics involve basic questions such as: to what extent can individual freedoms be sacrificed for the sake of collective gain; to what extent can ends justify the means; what does it mean to treat individuals as ends in themselves; to what extent can humans use other species for their own gain, and so on. The issue of making choices in the face of uncertainty (i.e. not knowing the consequences of one’s choices) is an important breaking point in debates on ethics, which directly relates to the uncertain and contingent nature of long-term sustainability and climate change.

I have argued that prevailing quantitative and economic discourses on sustainability tend to be primarily based on an (implicit) reductionist and utilitarian approach to ethics, while much of the notions about democracy and justice in the western world are still (implicitly) grounded in deontological principles. I have hypothesized that this deep tension underlies much of the disagreements and political controversies over sustainability policies, especially when it comes to the issue of how to deal with future uncertainty and how to justify the exercise of power. However, these arguments have been based on a rather shallow reading and understanding of ethics literature, and require a more sophisticated analysis. While refraining from a normative judgment on which approach to ethics is more desirable or just, the philosophy of ethics can help to make these implicit inconsistencies and tensions more explicit. The challenge therein is also to translate the highly abstract notions in political philosophy into a more accessible language, by applying them to real life dilemmas in sustainability politics, and by mapping out different approaches to ethics that decision-makers could choose from when dealing with these dilemmas. I believe that doing so can contribute to more fruitful and constructive political and societal debates on sustainability policies.

The issue of ethics also relates to theories about power, democracy, and citizenship. Although chapter 3 has provided quite an extensive overview of power theories as found in political science, sociology, and organizational psychology, there is still a large field of more philosophical political theory on power that needs to be explored further (e.g. Nietzsche, Foucault, Arendt). A major gap in my research lies in the fact that I have not dealt with democratic theory, despite several authors who have argued that there is much need for integrating democratic theory into transition management and into sustainability governance more generally (e.g. Hendriks 2009, Meadowcroft 2009, Hendriks & Grin, 2007, Stirling 2008). I do believe, however, that I have contributed to such further debates on democracy and sustainability, by my conceptualizing empowerment and the notion of ‘sustainable power relations’. The concept of empowerment *beyond* participation (see section 9.2.3) draws attention to the more *active* dimensions of democracy and ‘citizenship’. It is not just about involving citizens in terms of political accountability (e.g.

‘voting’) or decision-making power (e.g. ‘citizen participation’). It is also about citizen *action*, in terms of gaining access to physical resources and gaining back control of one’s environment.

A final issue that relates to ethics is the theme of violence and destruction. The careful reader might have noticed that while in chapter 3 the typology of power included ‘destructive power’ – defined as the capacity to destroy or annihilate existing resources – this notion entirely disappeared in the following chapters. In an earlier version of the empirical chapter on Transumo, I did at first make an attempt to apply the concept of destructive power, resulting in the following text:

For the most part, *destructive power* does not apply to Transumo. It only applies to the ‘destruction’ of certain ideas, to which Transumo contributed in its communication. Although Transumo defended several existing paradigms, it also presented some new ones, which goes hand in hand with the ‘killing’ of some old, persistent ideas: e.g. ‘transport is a basic right that government should pay for’, ‘government can force citizens into public transport’, and ‘technology alone can solve our problems’. It is questionable to what extent Transumo initiated (or succeeded in) the ‘killing’ of these ideas, as the need to get rid of them is called for throughout the entire Dutch mobility community, and is part of a broader political paradigm shift that has been going on for decades³⁵⁸. Nevertheless, Transumo has continued and supported the ‘attack’ on these ideas.

I decided to delete this text because I believed it to be inaccurate. While practitioners did question ‘old’ ideas and proposed new ones that could one day replace the old ones, at no point did I observe a conscious strategy of Transumo practitioners to ‘destroy’ or ‘get rid of’ resources, nor of ideas or concepts (as suggested in the text above). Neither did I observe anything that could accurately be described as ‘destructive power’ in the other cases under study. As such I gave up applying this concept to empirical observations, as it seemed to simply not apply to any of my cases under study.

Having said that, the fact that destructive power was not observed in the cases under study, does not mean that it is not relevant for the role of power in transition. On the contrary, I can think of various empirical phenomena that make destruction a particularly important aspect to study, e.g. wars, eco-terrorism, business or government plans to consciously destroy or get rid of existing resources (e.g. demolishing houses, or censoring ideas). The reason why I did not include the notion of ‘destructive power’ in my theoretical discussion and power-in-transition framework as presented in chapter 7, is that I did not know how to, for I had no reference point, neither in the cases under study, nor in the literature that I used.

While it is tempting to hypothesize that the destruction of resources and institutions provides a ‘window of opportunity’ for the creation of new resources, inspired by the notion of ‘creative destruction’, I doubt how and to what extent this idea – which

³⁵⁸ See intermezzo A

primarily focuses on market competition – relates to the actor-specific exercise of power to ‘destroy’ resources. In sum, the notion of destructive power, and its role in sustainability transitions, requires additional research, both theoretical and empirical. I would also argue that such research would need to be related to questions on violence and physical force, including associated ethical concerns.

9.3.2. Psychology, education, neuroscience and personal transitions

A significant part of this research is based on the concept of ‘intrinsic motivation’ as used in organizational psychology. However, the psychology therein has generally been quite superficial, scientifically speaking. There are many assumptions that have remained unquestioned and require further (psychological) research. For instance, one assumption in this dissertation has been that the intrinsic motivation of individuals *can be increased*, by inducing positive task assessments and changing the ‘interpretative styles’ of individuals, through particular process techniques, participatory tools, and empowering discourses. But to what extent is this assumption scientifically accurate? Perhaps the interpretative styles of individuals are persistently engrained in one’s personal character and formed at an early age, thus rendering it almost impossible to change. In that case it might be futile to ‘empower’ people in terms of trying to ‘increase’ their intrinsic motivation. The conclusion might then be that it is more effective to focus on early education (in the long term), and in the short term focus solely upon individuals who are already intrinsically motivated (i.e. ‘frontrunners’), while meanwhile stimulating desirable behavior amongst ‘the rest’ through simple ‘reward’ or ‘punishment’.

Recent insights in neuroscience and neuropsychology have indicated how individuals are much less ‘rational’ than is often assumed, and that choices are often not made on the basis of conscious information and intentions, but rather are predetermined by subconscious neurological and physiological stimuli (e.g. ‘pain’ and ‘pleasure’, ‘reward’ and ‘punishment’), or even by genetic predispositions (Gommer 2010, 2011). Group dynamics and power relations between human beings are not just a sociological issue but may also have strong biological and physiological roots. Even though sociobiology has long fallen out of favor as a discipline in social sciences – due to its controversial associations with biological determinism, social Darwinism, and eugenics – the fast growing scientific field of neuropsychology points to a revival of biological insights to understand human behavior and social processes. The fact that a particular scientific topic is ‘controversial’ in political terms does not mean that it should be avoided altogether. Considering the ambitions of transition studies to be an interdisciplinary and groundbreaking field of research, I argue that new insights from neuropsychology and sociobiology should be taken into account, and linked to political and ethical issues. This might provide important new insights about how individual human beings are or can (not) be motivated to contribute to sustainability transitions.

Having said that, I do wish to emphasize the following. The fact that I acknowledge the influence of physiological stimuli (and that ‘reward’ and ‘punishment’ may turn out to be more ‘effective’ than attempting to change ‘interpretative styles’ through management techniques), does not necessarily contradict my argued need to focus on ‘intrinsic

motivation', nor does it change my fierce critique of 'pricing policies'. Rather, physiological and neurological insights might change and expand our understanding of what constitutes 'intrinsic motivation' and how it can be induced. I argue that *even if* 'reward' and 'punishment', or 'pleasure' and 'pain', are the ultimate source of human behavior and individual choice, pricing policies are still not the solution to stimulate sustainable behavior. In fact, neuropsychology emphasizes how individuals make 'irrational' decisions in economic terms, and that 'price' is just one out of many other factors that determine choices (Lamme 2010). I would argue that these other factors – i.e. what individuals 'desire' in physiological terms (e.g. sex appeal, security, social status, etc.) – are far more 'intrinsic' than financial stimuli. As such, desirable human behavior might be much more effectively influenced and manipulated by playing directly into these physiological factors (for instance by creating positive associations around sustainable products in terms of sex appeal and social status, and/or by punishing unsustainable behavior through physical inconvenience, or public naming and shaming). Obviously, such ideas are highly controversial and have serious ethical implications, but than again, so do the widely accepted proposals for pricing policies (as elaborately discussed in this research).

Another issue that is relevant for empowerment, and which requires further research, concerns individual transformation, personal life transitions, and subsequent changes in daily individual practice. How and when do individuals change their lifestyle? People are most likely to change their daily practices and to consider the purchase of new products when they are going through a 'personal life transition', e.g. going to college, moving in together, buying a house, loosing a job, getting children, children leaving their parental home, divorcing, retiring, and so on (Kirby 2004:). *How do such personal life transitions relate to societal sustainability transitions?* How and to what extent can one purposively play into the momentum of such personal life transitions to enable and accelerate sustainability transitions? These questions require further research into the different stages of psychosocial development and into daily consumer practices (Shove 2004, Spaargaren 2003), and subsequently using these to refine and extend the power-in-transition framework.

The theme of personal transformation and intrinsic motivation also relates to education and spiritual transformation. Some authors have argued that sustainability transitions are primarily a matter of cultural change, thus requiring specific education and spiritual transformation (e.g. O'Riordan 2004). But in this age of secularization, materialism, and consumerism, what kind of spiritual transformation could this be? And how exactly can sustainability be best integrated into the education system? So far, these questions have hardly been addressed in transition studies. As such these themes requires further research, and integrating insights from other fields - such as education sciences, philosophy, anthropology, and religions studies - into our understanding of sustainability transitions. This also relates directly to the issue of power, as it involves questions on how our personal education, cultural, and religious norms and values (or lack thereof) impact the way in which we approach power throughout our lives.

9.3.3. Geography, scaling issues and government levels

Another issue that has not been directly dealt in this research concerns questions on place, geography and scale in relation to governmental levels. As also pointed out in the research agenda of the *Sustainability Transitions Research Network* (2010:18): “until now transition theory has paid too little attention to the spatiality of transitions” and we need to address questions such as: “why do transitions occur in one place and not in another”, and “what is the role of cities and regions in transition processes?” This is especially relevant for transition management researchers who have been increasingly involved and focused on regional and city related transition projects³⁵⁹. While the concept of transition (management) is theoretically generic and can apply to any scale, in practice it might be more suitable for specific geographic and governmental levels, i.e. regional and/or local. Although I did touch on this issue empirically in the Intermezzo on the *South Wing region*, I did not really address the issue of geographic and governmental levels when theoretically discussing power in transition (management).

Having said that, I do believe that my analytical power-in-transition framework can contribute to future research on the spatial aspects of transitions. First, the power-in-transition framework is more suitable for researching spatially scattered initiatives than the existing multi-level framework in transition studies. This particularly concerns the reconceptualization of the landscape in terms of the collective exercise of power, thus including the power of *transnational* networks. Furthermore, I have repeatedly emphasized the need to look beyond functionalist system boundaries when dealing with sustainability transitions, and integrated this within the analytical power-in-transition framework. Such ‘going beyond’ functionalist system boundaries (e.g. going beyond ‘the Dutch transport sector’) inherently implies more attention for spatial and transnational issues, as has also been argued in a separate publication that provides a socio-spatial perspective on the car regime (Zijlstra and Avelino 2012). Moreover, this dissertation has provided various concepts and typologies - on resources, power dynamics, and power relations - that help to study the role of *geo-politics* in sustainability transitions, especially in terms of ‘the active exercise of power’ as the mobilization of physical resources including natural resources (e.g. a piece of land). While geo-politics and consequent power relations are often studied in terms of international relations, Routledge (1996) argues that *local* geo-politics deserve more attention, especially in the context of social movements, because physical ‘terrains of resistance’ provide social movements (and ‘radical niches’) with a *spatial* grounding.

9.3.4. Participatory Tools and Action Research

Another challenge for future research is to further develop and test the participatory use of the power and empowerment insights in this research, possibly in terms of testing and adapting the ‘power tool’ and ‘empowerment tool’ as proposed in chapter 8 (and summarized in section 9.1.4). I have argued that the power concepts presented in this

³⁵⁹ Researchers within DRIFT have increasingly focused on urban and regional transitions. See for instance Loorbach 2009

dissertation are suitable for transdisciplinary research, or at least more suitable than many other power concepts found in social theory literature, because the concepts presented here include power typologies that avoid mono-disciplinary jargon and always conceptualize power as an *actor-specific* capacity. I also think that using such actor-specific conceptualization of power to redefine transition notions – such as ‘regimes’ and ‘niches’ – is more suitable for transdisciplinary and participatory research, than are functionalist and quantitative conceptualizations of niches and regimes as systemic ‘constellations’ that have a certain amount of ‘power’ in ‘the subsystem’ (as proposed by De Haan 2010, Rotmans and de Haan 2011). I argue that a qualitative and actor-specific characterization of niches and regimes – as groups of actors that exercise power in different ways – corresponds better with the ‘intuitive’ and ‘colloquial’ use of transition discourse. When practitioners speak of ‘regime-actors’, they are not necessarily referring to actors who exercise the ‘most’ power, but rather referring to actors that defend and reproduce the status quo. Moreover, when speaking about influential niche-actors – ‘frontrunners’ – one is referring to people that effectively create and spread new ideas and products, i.e. exercise a *great deal of innovative power*, rather than suggesting that these frontrunners/niche-actors have the ‘smallest’ amount of power in a system (which is suggested in the functionalist conceptualization of niches). Although the intuitive and colloquial use of transition discourse is not necessarily in itself an argument on how to define scientific concepts, it is relevant in a field of studies that aims to be transdisciplinary and participatory. While acknowledging the great analytical power of the functionalist, systemic transition model, as far as power is concerned I argue that *participatory* dialogue and story-telling is better served by a language that acknowledges the role of actors and the qualitative distinction between their behavior, rather than assessing them as ‘constellations’ that ‘impact’ certain ‘functional subsystems’

However, whether and to what extent the power and empowerment tools that I propose actually work in a participatory context remains to be tested, in the same way that other transition management instruments have been applied, tested, and adapted in practice. This requires *transdisciplinary and participatory research*, involving the experience, tacit knowledge, and feedback of practitioners. Although I obviously did use some knowledge of practitioners as a basis to develop these tools, I did not develop and apply these tools *together with* practitioners, nor did I try to use these tools to facilitate ongoing processes. This can be done in the future by testing the power and empowerment tools through participatory methods in Integrated Sustainability Assessment, such as focus groups, scenario exercises and dialogue methods. Or simply by experimenting with the power and empowerment tools in their current form within ongoing initiatives, and assessing whether they are seen as useful by the practitioners involved. I hope to be able to do such action research together with my colleagues at the *Dutch Research Institute for Transitions* over the coming years. The first step therein would be to translate the concepts into the Dutch language, and I also expect that testing these tools in practice will lead to considerable adaptation and reformulation, starting with translating the abstract terminology into more accessible words, and simplifying and reducing the various steps so as to make the application of the tools less time-consuming.

9.3.5. The Power of Civil Society and the Transition to Sustainable Communities

The fourth, and my final, challenge for future research concerns the power of civil society in sustainability transitions. This theme has been voiced by several other authors (Seyfang and Smith 2007, Smith 2006, 2007, Haxeltine and Seyfang 2009, Avelino and Kunze 2009, Zijlstra and Avelino 2012), and has been mentioned in the research agenda of the *Sustainability Transitions Research Network* (2010).

In the coming years I hope to focus on this particular research challenge, and to use the power-in-transition framework to study the power of civil society initiatives in sustainability transition, especially in terms of how these civil society initiatives interact with other groups of actors (government, business, science) and how they position themselves towards dominant landscape trends. As such, this very final section of my dissertation is not only about describing a future challenge. It also presents my own research agenda for the future.

Gaining understanding in the dynamics of civil society will first require Third Sector research (Salomon 2010; Birch & Whittam 2008; Moulaert and Ailenei 2005, Avelino 2011), which focuses on different organizational and economic forms in ‘civil society’ (including social enterprises, community action, and co-operative organizations). In terms of power and empowerment, insights from Third Sector research are crucial to further specify the abstract, theoretical notions of the power-in-transition framework, especially the notion of ‘active and radical niche-regimes’.

I have argued that sustainability transitions require radical niche-regimes to actively exercise transformative power; i.e. groups of actors that develop new institutions and use these to also mobilize physical resources, while remaining relatively independent from regimes. Phenomena such as cooperatives, collective purchasing, crowd-funding, and alternative currencies – as studied in Third Sector research – provide specification and empirical illustration of what kinds of ‘new structures and institutions’ enable alternative networks to exercise power independently from existing regime structures. Moreover, Third Sector research helps to specify transformations in *socio-economic* power relations, which have been under-studied in the *socio-technical* focus that has prevailed in transition studies.

Empirically, I am especially interested in exploring the transition potential of *the ecovillage and ecocity movements*, as transnational networks of actors that aim to contribute to ‘a transition to sustainable communities’ (Avelino & Kunze 2009). In the past few decades one can observe a progressive development in ‘eco-living’; starting with back-to-the-land hippie communes and emergence of the environmental movement in the early 60s; moving on to the rise of a more organized and technology-oriented ecovillage movement in the 80s and 90s; and recently an increasing interest for eco-living amongst civil society (e.g. *Transition Towns movement*), government, and business developers (e.g. *ecotown, eco-neighbourhood* and *ecocity* projects) (see figure below).

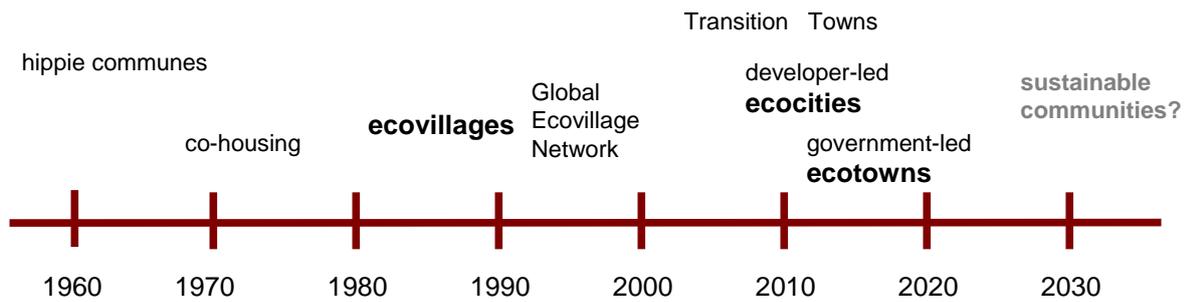


Figure 24. Progressive development of 'eco-community living' (preliminary time-line)

I plan to use the power-in-transition framework as developed in this thesis to analyze the power dynamics as observed in and around the ecovillage and ecocity movements, through both historical research (1960-2010) as well as contemporary research on ongoing developments and future plans and proposals for eco-living projects (2010-2030). The first step of this research will be to explore how ecovillage and ecocity movements relate to landscape developments, i.e. how they challenges dominant trends (e.g. capitalism, individualization, acceleration, centralization), and how they correlate with counter-trends (e.g. relocalization, communalism, deceleration, decentralization), and other social movements, such as the *Transition Towns* movement (Haxeltine and Seyfang 2009, Hopkins 2010), the *Slow Movement*, and the environmental movement and relocalization movement more generally (Bailey et al. 2010). The second step will be to select a diverse number of cases within the wide plethora of networks and initiatives involved in these movements, including regimes, niche-regimes, and niches, both radical and moderate.

Subsequently I will analyze the interaction between these cases in terms of power exercise, resources, power relations, power dynamics, empowerment, and so on, by using the concepts and typologies as developed in this dissertation. The power-in-transition analysis would focus on analyzing how ecovillage and ecocity initiatives interact with their environment, e.g. how and to what extent their products and ideas get 'exported' or 'mainstreamed' over time, and also how they interact (and conflict) with other groups of actors, both neighboring communities, businesses, and governments. Moreover the analysis will observe how ecovillages and ecocities cooperate amongst themselves and how they organize themselves in transnational networks (e.g. the *Global Ecovillage Network*, or the *Ecocity Builders* network). Most importantly however, the analysis will explore how some elements of the more radical ecovillage movement are being 'mainstreamed' and/or 'absorbed' by businesses and governments in the form of developer-led 'ecocities' (including eco-tourism resorts) and government-led 'eco-towns'. In this process, several of the more radical elements of the ecovillage movement are filtered out, such as the strong focus on small communities and solidarity economics (Avelino & Kunze 2009). Such processes provide rich material to analyze the diverse and complex power dynamics in the transition to eco-community living. Therein I will also use the notion of 'sustainable power relations' to critically discuss the power relations that are (implicitly) implied in future proposals and plans (e.g. the worrying image of a future society filled with 'gated' and 'elitist' eco-communities).

However, the purpose of my future agenda is not just to 'do research', to 'test' the power-in-transition framework, or to critically 'deconstruct' eco-living projects. I hope that using the hypotheses, notions and principles provided in this thesis can help to empower various actor groups that strive to contribute to 'a transition to sustainable communities', My hope is that this thesis will assist these groups in evaluating the transition potential of their initiatives, and will offer suggestions on how this transition potential can be increased. My motivation to do so is my belief that the ecovillage and ecocity movements have the potential to involve and empower individual citizens, and to play into the momentum of *personal transitions* as the "nodal points at which individuals reconsider their duties, needs and options" (Kirby 2004). These 'personal life transitions' increase the intrinsic motivation of individuals to integrate alternative practices in their daily life and to break with their ingrained patterns.

In this sense, the ecovillage movement does not only respond to global ecological or social crises, but also provides an answer for specific *individual* physical and psychological needs. By directly involving citizens in this manner, the ecovillage movement nurtures individuals who are exceptionally *intrinsically* motivated to develop, implement, and advocate alternative forms of living. We can argue that it is the specific *synergy between personal and societal transformation* that increases intrinsic motivation and empowers individuals to 'make a difference'. Researching the ecovillage movement can help us further explore this synergy between personal transitions and societal transformation, and how this plays a role in sustainability transitions.

APPENDIX I. OBSERVED MEETINGS

Table 35 specifies all the meetings that were used for data-collection. For each meeting the following items are specified: a short title/description of the meeting, the hosting organization, and the cases for which the interview-material was used (i.e. empirical chapters and/or intermezzos). These meetings were observed through various research methods, as specified in chapter 2:

- Ethnography => see chapter 2, section 2.3.1
- Action research => see chapter 2, section 2.3.2
- Participant observation => see chapter 2, section 2.3.3

Observations in these meetings were collected in fieldnotes, which were subsequently transcribed, categorized in case-studies and then used for empirical analysis. The exact way in which fieldnotes were processed and used for data-analysis is also specified in chapter 2 (section 2.4 on data-analysis).

Moreover, at the beginning of each intermezzo and empirical chapter, I explained the type of meetings that I attended for each case-study, and also what my specific role was in these different type of meetings (ranging from action researcher to unobtrusive observer). Throughout these intermezzos and empirical chapters, direct references to the meetings in table 33 are specified in *footnotes*.

Nr.	Date	Attended Meetings	Organization	Usage in cases				
				Intermezzo A	Chapter 4	Chapter 5	Chapter 6	Intermezzo B
1	04.04.2005	Discussion Meeting South Wing / Transumo	DRIFT		x			x
2	12.04.2005	Working Group Railforum on Innovation 1	ProRail	x				
3	20.04.2005	Innovation Conference "Kansrijk" SenterNovem	SenterNovem	x				
4	27.04.2005	6th Symposium Dynamic Traffic Management	ANWB	x				
5	28.04.2005	Master Class Rail Freight Transport 1	EUR	x				
6	24.05.2005	Meeting Fresh Logistics Project	Transumo		x			
7	07.06.2005	EUR Discussion Meeting Transumo	DRIFT/ EUR		x			
8	23.06.2005	Symposium Bereikbaarheid anders Betalen	KpVV	x				
9	15.06.2005	Mini-symposium Duurzame Mobiliteit	Gemeente Den Haag	x				
10	28.07.2005	Meeting Fresh Logistics Project	Transumo		x			
11	17.08.2005	Meeting Fresh Logistics Project	Transumo		x			
12	27.09.2005	Meeting Project Stedenbaan	Haaglanden					x
13	25.10.2005	Meeting Air Quality Club v. Maarssen	V&W	x				
14	03.11.2005	Bilateral meeting manager TEE program	V&W				x	
15	03.11.2005	EU symposium Air Quality	Province Utrecht	x				
16	10.11.2005	Networkday Transition Professionals	CCT	x				
17	15.11.2005	Working Group Railforum on Innovation 2	ProRail	x				
18	21.03.2006	Program meeting TEE	V&W				x	
19	09.05.2006	Bilateral meeting project leader A15-project	DRIFT			x		
20	02.06.2006	KSI Conference	UvA	x				
21	20.06.2006	Symposium Transition Professionals Network	CCT	x				
22	27.06.2006	Kick-off Platform Sustainable Electricity	EZ	x				
23	28.06.2006	Bilateral meeting manager TEE program	V&W				x	
24	06.07.2006	Kick-off Meeting TEE-program	V&W				x	
25	12.07.2006	Program meeting TEE	V&W				x	
26	19.07.2006	Bilateral meeting Project-Leader Agenda TEE	X				x	
27	12.09.2006	Working Group Transport Avoidance	V&W				x	
28	12.09.2006	Bilateral meeting manager TEE program	V&W				x	
29	15.09.2006	Kick-Off A15-project	EUR		x	x		
30	20.09.2006	Program meeting TEE	V&W				x	
31	28.09.2006	Presentation Supervisor for TEE managers	DRIFT				x	
32	18.10.2006	Program meeting TEE	V&W				x	
33	31.10.2006	Congress Railsector	Railforum	x				
34	03.11.2006	Meeting with managers A15-project on TM	EUR		x	x		

				Intermezzo A	Chapter 4	Chapter 5	Chapter 6	Intermezzo B
35	07.11.2006	Meeting Evaluation Logistical Networks	Drift		x			
36	08.11.2006	Election Debate Environment & Traffic	VVM / Nieuwspoord	x				
37	14.11.2006	Program meeting TEE	V&W				x	
38	23- 24.11.2006	CVS congres	CVS	x				
39	01.12.2006	Excursion A15-project	Transumo			x		
40	07.12.2006	Symposium BSIK-subsidy	EUR	x		x		
41	13.12.2006	Program meeting TEE	V&W				x	
42	13.12.2006	Business Council Meeting A15-project	Transumo			x		
43	15.12.2006	South Wing Transition Arena nr. 1	DRIFT					x
44	19.12.2006	Program Meeting Transumo	Transumo		x			
45	17.01.2007	Network Day Transition Professionals	CCT	x				
46	31.01.2007	Bilateral meeting manager TEE/ISL-program	Connekt				x	
47	31.01.2007	Team Meeting ISL-program	Connekt				x	
48	01.02.2007	Meeting about South Wing	Province South-Holland					x
49	06.02.2007	Team Meeting ISL-program	Connekt					x
50	07.02.2007	Project Meeting A15-project	Transumo				x	
51	20.02.2007	Team Meeting ISL-program	Connekt				x	
52	27.02.2007	Program Meeting Transumo	Transumo		x			
53	28.02.2007	South Wing Transition Arena nr. 2	DRIFT					x
54	06.03.2007	Team Meeting ISL-program	Connekt				x	
55	08.03.2007	Symposium Increasing Air Transport Schiphol	VVM	x				
56	16.03.2007	Program Meeting Transumo	Transumo		x			
57	20.03.2007	Team Meeting ISL-program	Connekt					
58	22.03.2007	Symposium Mobility South Wing	Nai/Atelier South Wing	x				x
59	27.03.2007	Program Meeting Transumo	Transumo		x			
60	03.04.2007	Team Meeting ISL-program	Connekt				x	
61	05.04.2007	Congress Project Rush Hour Avoidance	Transumo		x			
62	05.04.2007	Bilateral meeting Project-Leader Profiling ISL	X				x	
63	11.04.2007	Symposium Mobility Transumo	Transumo		x			
64	12.04.2007	Debat NS-ProRail (Jonge Veranderaars)	ProRail	x				
65	16.04.2007	Movie Inconvenient Truth ISL team	Connekt				x	
66	17.04.2007	Team Meeting ISL-program	Connekt				x	
67	25.04.2007	Project Meeting A15-project	Transumo		x	x		

				Intermezzo A	Chapter 4	Chapter 5	Chapter 6	Intermezzo B
68	27.04.2007	7th National Mobility Debate	Elsevier	x				
69	01.05.2007	Team Meeting ISL-program	Connekt				x	
70	03.05.2007	Lecture & Debate Harbor & Maasvlakte	EUR/Knowledge Club	x				
71	04.05.2007	Bilateral meeting manager ISL-program	Connekt				x	
72	07.05.2007	Erasmus Lecture Minister Jacqueline Cramer	Club of Rome NL	x				
73	15.05.2007	Team Meeting ISL-program	Connekt				x	
74	29.05.2007	Team Meeting ISL-program	Connekt				x	
75	29.05.2007	Trilateral meeting manager & project-leader ISL	V&W				x	
76	04.06.2007	Try-out Profession Course Logistics	Connekt				x	
77	07.06.2007	Transumo Congress	Transumo		x			
78	12.06.2007	Team Meeting ISL-program	Connekt				x	
79	21.06.2007	Midzomern8 Sustainability Festival	Acht voor Ruimte					
80	22.06.2007	Meeting Managers A15-project	EUR		x	x		
81	26.06.2007	Kick-Off ISL Program	Connekt				x	
82	11.07.2007	Team-Bonding Session ISL-program	Connekt				x	
83	14.08.2007	Meeting Managers A15-project	EUR					
84	28.08.2007	Team Meeting ISL-program	Connekt					
85	04.09.2007	Project Meeting A15-project	DCMR			x		
86	11.09.2007	Team Meeting ISL-program	Connekt				x	
87	13.09.2007	Project Meeting A15-project	EUR			x		
88	25.09.2007	Team Meeting ISL-program	Connekt					
89	03.10.2007	Prep Meeting Innovation Impuls A15-project	EUR			x		
90	05.10.2007	Team Meeting ISL-program	Connekt				x	
91	08.10.2007	Plenary Meeting A15-project	Transumo		x	x		
92	09.10.2007	Team Meeting ISL-program	Connekt				x	
93	16.10.2007	Working Group TM Transumo	Transumo		x			
94	18.10.2007	1st Innovation Impulse A15-project	Transumo				x	
95	29.10.2007	Plenary Meeting A15-project	MCR		x	x		
96	30.10.2007	4th Network Day Transition Professionals	CCT	x	x	x		
97	01.11.2007	Innovation Conference "Dag van Maarsse" "	V&W	x		x	x	x
98	05.11.2007	2nd Innovation Impulse A15-project	Transumo				x	
99	06.11.2007	Team Meeting ISL-program	Connekt				x	
100	06.12.2007	Prep meeting deliverable 16 A15-project	EUR				x	
101	11.12.2007	Symposium Organization Transumo	Transumo		x			

				Intermezzo A	Chapter 4	Chapter 5	Chapter 6	Intermezzo B
102	12.12.2007	Project Meeting CoRA-project	LNV					x
103	08.01.2008	Transition Arena CoRA nr. 1	DRIFT					x
104	15.01.2008	Team Meeting ISL-program	Connekt				x	
105	19.02.2008	Thematic Meeting Government Processes	AT-Osborne/ Transumo		x			
106	21.01.2008	TNO-DRIFT discussion session	TNO	x				
107	24.01.2008	Strategic Meeting ISL-program (management)	Connekt				x	
108	26.02.2008	Team Meeting ISL-program	Connekt				x	
109	10.03.2008	Strategic Meeting ISL-program (entire team)	Connekt				x	
110	12.03.2008	Symposium Emission Trade Mobility	Kivia Niria /VVM					
111	25.03.2008	Team Meeting ISL-program	Connekt				x	
112	07.04.2008	KCT-colloquium "Power"	DRIFT	x				
113	22.04.2008	Team Meeting ISL-program	Connekt				x	
114	14.05.2008	Transition Arena CoRA nr. 2	DRIFT					x
115	15- 16.05.2008	NECTAR conference Sustainable Mobility	EUR				x	
116	19.05.2008	KCT-colloquium "Innovation/Spatial Process"	TNO	x				
117	09.06.2008	KCT-colloquium "Transition Scenarios"	DRIFT	x				
118	13.06.2008	KSI-conference	TUE	x				
119	16- 20.06.2008	Study Trip Sustainable Logistics London	Connekt				x	
120	25.06.2008	Symposium "Images of Sustainable Mobility"	Transumo		x			
121	07.07.2008	Deltametropool Symposium	Deltametropool					x
122	10.07.2008	Evaluation Meeting Study Trip Logistics	Connekt				x	
123	15.07.2008	Team Meeting ISL-program	Connekt				x	
124	09.09.2008	Team Meeting ISL-program	Connekt				x	
125	16.09.2008	Reunion Study Trip Sustainable Logistics	Connekt				x	
126	30.09.2008	Team Meeting ISL-program	Connekt				x	
127	02.10.2008	Symposium HUBHolland	LEF Future Centre	x				
128	14.10.2008	AL Gore Event	Urgenda / DRIFT	x				
129	22.10.2008	Bilateral Meeting workgroup leader A15-project	Cafe Engels		x	x		
130	03.11.2008	KCT-colloquium "Transition Paths & Innovation"	DRIFT					
131	04.11.2008	Researchers Meeting Transumo	DRIFT					
132	11.11.2008	South Wing Transition Arena nr. 8	DRIFT					x
133	17.11.2008	Meeting on NECTAR book	EUR		x	x		
134	25.11.2008	Visit Province South-Holland	DRIFT					x

				<i>Intermezzo A</i>	<i>Chapter 4</i>	<i>Chapter 5</i>	<i>Chapter 6</i>	<i>Intermezzo B</i>
135	26.03.2009	Vision Session Mobility NL 2050	Urgenda / DRIFT					
136	07.04.2009	Kick-off Michael Braungart	EUR / DRIFT					
137	16.04.2009	Meeting Transumo Board South Wing Report	DRIFT	x	x			x
138	30.06.2009	Visions on Sustainable Mobility Meeting	Transumo	x	x			
139	07- 08.06.2009	Session on Sustainability Vision NL 2050	Urgenda	x				
140	09.09.2009	Dag van de Duurzaamheid	Urgenda	x			x	
141	09.11.2009	Final "Knowledge Festival"	Transumo	x	x	x		

Table 35. Attended meetings used for data-collection

APPENDIX II. INTERVIEWS

Table 36 specifies all the interviews conducted for this research, in chronological order. I conducted and reported the majority of these interviews myself (sometimes together with a colleague). Out of a total of 67 interviews, there were only 5 interviews where I was not present myself, that were conducted and reported by other colleagues (indicated with an * in the table). For each interviews the following items are specified: date, function and organization of the interviewee, the cases for which the interview-material was used (i.e. empirical chapters and/or intermezzos), and the *context* in which the interview took place (see explanation below).

The majority of interviews were conducted in the context of a specific (action research) project (see also chapter 2, section 2.3). The column on 'context' specifies which project activity the interview was part of. When the context is described as 'open' this means that the interview was not directly related to a specific project, but solely oriented towards this the research questions underlying this dissertation. For those interviews that were related to a project, a total of 6 different project activities are distinguished (in chronological order):

- Project 1: Interviews on Distinction between South Wing and North Wing Region
- Project 2: Interviews for South Wing Transition Arena
- Project 3: Interviews for Evaluation Logistical Networks Transumo
- Project 4: Interviews for Round Table Innovation Program Sustainable Logistics
- Project 5: Interviews for Project Corridor Rotterdam-Antwerp
- Project 6: Interviews on the A15-project

Each of these project activities is described below in terms of objectives (i.e. reason why interviews were conducted), the questions that were asked during the interviews, and how the interview was reported.

Project 1: Interviews on Distinction between South Wing and North Wing Region

Between 2005 and 2009, DRIFT ran a project that focused on the South Wing region (see Intermezzo B). At the very beginning of this project, I was asked to write an essay about the distinction between the South Wing and North Wing Region in relation to mobility and regional innovation (March 2005, see Intermezzo B, section B.2.3).

For this purpose, I scanned a number of reports and websites that addressed this topic, and selected a total of eight individuals to be interviewed. The selection was oriented towards 1) practitioners from the transport sector (e.g. managers and staff members of transport organizations) and 2) experts or public officials that focused on regional clustering and innovation. These interviews were conducted via telephone and relatively very short (15-20 minutes), in which I asked the following questions:

1. *What are your thoughts on the distinction between South Wing and North Wing?*
2. *Why has this distinction been made / what is the function of this distinction?*
3. *To what extent do you think this distinction is desirable and functional?*

Notes were taken during the telephone interviews, and immediately digitalized and translated into English (in contrast to the other interviews, which were reported and archived in Dutch). The outcomes of these interviews were used for 1) the essay on the distinction between the South Wing

and North Wing, 2) the first DRIFT-report on spatial planning in the South Wing region (Minnesma et al. 2007) and 3) empirical observations and analysis in this dissertation as presented in Intermezzo B “The South Wing Region: Mobility, Space and Power in Transition”.

Project 2: Interviews for South Wing Transition Arena

In 2006 a team of DRIFT-researchers, including myself, started working on setting up a ‘transition arena’ that focused on the South Wing region (see Intermezzo B and/or Minnesma et al. 2007 and Eijndhoven et al. 2009). In September and October 2006 we interviewed a total of 11 individuals that were directly or indirectly involved in the South Wing region (public, private, academic, NGO and others, e.g. architects). I conducted and reported 5 out of these 11 interviews myself, and used 7 for this dissertation (as specified in the table). The interviews were semi-structured and based on the following questions (as defined by the DRIFT-team):

On Spatial Planning

1. *What are your associations with spatial planning?*
2. *What are the challenges of spatial planning?*
3. *What does “spatial quality” mean for you?*
4. *How do we achieve a higher level of “spatial quality”*

On the South Wing Region

5. *Which physical system are we talking about when referring to the South Wing?*
6. *What is your experience of the South Wing region (in terms of living, working and/or recreation?)*
7. *What are your interests in the South Wing region (both professionally and privately)?*

On Spatial Planning in the South Wing Region

8. *Did you perceive large changes in the South Wing in the past 25 years? If so, which?*
9. *What according to you would be a desirable future image of spatial planning in the South Wing in 25 years?*
10. *What do you think that probably will happen in de coming 25 years regarding spatial planning in the South Wing?*
11. *How would you characterize the transformation potential of the South Wing?*
12. *What are the barriers (for transformation / improvement)?*

Actors in the South Wing

13. *Who are the most important actors in the South Wing regarding spatial planning?*
14. *Which actors form the ‘regime’?*
15. *Which actors can be characterized as ‘niche-players’?*
16. *How is the relation between these different actors?*

Contribution to Innovation

17. *What are examples of transformation and innovation processes?*
18. *Can Habiforum contribute to innovation processes in spatial planning? If so, how?*
19. *Would you like to participate in a transtion arena on spatial planning in the South Wing?*

Interviews were recorded (but not literally transcribed), reported and archived based on notes taken during the interviews, and subsequently used as input for the arena sessions and the first DRIFT-report on spatial planning in the South Wing region (Minnesma et al. 2007). My main task in the South Wing project was to 1) compare and analyze the interview reports in terms of consensus and contestation, 2) select interesting and challenging quotes and 3) applying these interview

outcomes to produce presentation slides for the arena session and input for the report. This has provided a partial basis for the empirical observations and analysis as presented in Intermezzo B “The South Wing Region: Mobility, Space and Power in Transition”.

Project 3: Interviews for Evaluation Logistical Networks Transumo

At the end of 2006 my supervisor and I were asked by Transumo to evaluate two projects within their thematic cluster *Logistical Networks*; the project *National Networks* and the project *European Networks*. We were asked to evaluate these two projects from a transition (management) perspective, based on several document reviews and interviews with project participants. Together with a professor in Public Administration (also asked to evaluate the project) and a staff member of the Transumo organization, I interviewed a total of 6 individuals involved in the Logistical Network projects (1 theme-leader, 1 project-leader and 4 project participants). The interviews took place in November and December (2006), of which four interviews were held on location and two by telephone. The interviews were semi-structured, based on the following basic questions:

- *What was/is your role in the Logistical Networks projects?*
- *What has been achieved in these projects?*
- *To what extent are you satisfied with what has been achieved in the projects?*
- *What did you want to achieve in these projects?*
- *Which methods did/do you use achieve these objectives?*
- *What would you have done differently, looking back?*
- *How was the cooperation between knowledge institutes and companies?*
- *What did you think of the project meetings? How was the ‘atmosphere’?*
- *What was / is the role of Transumo organization in these projects?*
- *What is your opinion of ‘transition (management)’ and ‘sustainable mobility’?*

These questions have not been numbered as they were not asked in chronological order during the interviews; the sequence depended on the flow of the conversation, and many more questions were asked to go deeper in to certain statements. Moreover, I also used these interviews to learn more about the transport sector, especially about freight transport and logistics. As such these interviews did not only provide information for the case-study on Transumo (chapter 4), but also on mobility discourse in general (as discussed in Intermezzo A), and the freight transport and logistics sector in particular (chapter 6). The interviews were not recorded, but reported based on notes taken during the interviews. These reports were sent to the interviewees for approval and correction, and it was also asked whether there were some specific statements that could not be literally quoted (which was only the case for a minor amount of statements). Statements made in these interviews were most directly used for: 1) DRIFT’s evaluation report of Transumo’s Logistical Networks projects (Avelino & Rotmans, 2007), 2) a scientific article on the challenges of applying transition (management) concepts to ongoing projects (Avelino, 2009) and 3) empirical observations and analyzes as discussed in this dissertation regarding Transumo, mobility discourse and freight logistics (i.e. Intermezzo A, chapter 4 and chapter 6).

Project 4: Interviews for Round Table Innovation Program Sustainable Logistics

Between 2006 and 2008 I was involved in the development, set-up and organization of (subprojects of) the *Innovation Program Sustainable Logistics* (see chapter 6, section 6.1.2). One of my main activities was to help prepare the round table discussion to be held during the official kick-off of the program 26th of June 2007. In preparation for this round-table a total of thirteen interviews were

held with key figures in the logistics sector. The interviews were held in May and June 2007, nine of them by the program manager and myself, four by the manager and other team members. For this dissertation I have only used the nine interviews that I held and reported myself (as specified in the table). The interviews were semi-structured and based on the following set of questions, which were developed by the program manager and myself:

Theme 1. Trends & Future Vision Logistics NL

1. *Which trends do you observe in the logistics sector?*
2. *What is your future image of the logistics sector in 10-20 years?*
3. *What is your (desired) vision on the logistics sector?*
4. *What will your company/organization look like in 10-20 years (regarding logistics)?*
5. *What are the most important barriers / which challenges do you encounter?*

Theme 2. Sustainability in Logistics

6. *The new cabinet believes there is a problem with CO2-emissions, climate change and energy. Do you perceive this problem as well?*
7. *What do you believe to be "sustainability logistics"? (People, planet, profit? Mostly environment, or broader than that?)*
8. *How do you delineate the logistics sector?(storage, business sites, warehousing, supply chains?)*
9. *Efficiency, energy-use, optimization, innovation: what is the current status/ can it be improved?*
10. *What do you believe to be the most important items for sustainable logistics?*

Thema 3. Actor Roles

11. *What does your company/organization currently do in terms of sustainability and CSR?*
12. *What does your company/organization currently do in terms of sustainable logistics?*
13. *Which role do you see for your company/organization in the coming 10-20 years?*
14. *Which roles do you expect from others: carriers, shippers, government, consumers?*
15. *Who do you believe to be the most important "problem owner" of (un)sustainable logistics?*

Thema 4. Innovation program Sustainable Logistics (ISL)

16. *What are your suggestions for themes and items to be addressed in ISL?*
17. *Which actors from the logistics sectors do you believe should be involved in ISL?*
18. *Are you interested in participating in the round table discussion on the 26th of June and a potential follow-up?*

Interviews were recorded (but not transcribed), and reported based on the notes taken during the interviews. I collected the reports of all the interviews and analyzed these reports in terms of main themes and points of agreement and disagreement, which was subsequently used to prepare the discussion of the round-table meeting. Moreover, these interview reports were used as a basis for the empirical observations and analyzes in this dissertation, mostly regarding the case-study of the innovation program Sustainable Logistics (chapter 6) but also for the intermezzo on mobility discourse more generally (Intermezzo A).

Project 5: Interviews for Project Corridor Rotterdam-Antwerp

In 2007 and 2008 I was involved in a DRIFT project that had the ambition to transform the Corridor Rotterdam-Antwerp (CoRA) in such a way that it would contribute to transitions to sustainability (in mobility, energy, water and agriculture). The ministry of Transport, Public Works and Water

Management (V&W) and the Ministry of Agriculture, Nature and Food Quality (LNV) set up a project on the so-called Mainport Corridor South, i.e. the corridor between Rotterdam and Antwerp. The aim of that project was to facilitate the development of infrastructure (extension of a main road A4) in combination with 'regional development'. DRIFT's CoRA-project was set up to organize an alternative vision on this region that would focus on transitions and sustainability, and to mobilize a network for doing so by organizing transition arena sessions. I was involved in the preparation of these sessions, mostly in terms of conducting and analyzing interviews with relevant stakeholders. Together with the other members of the CoRA-team I conducted a total of 12 interviews with actors from multiple sectors (public, private, academic, NGO, mobility, logistics, energy, spatial planning, agriculture, water management, etc.). These interviews were mostly unstructured, partly semi-structured based on the following basic questions:

- *What is your vision on the development of the corridor between Rotterdam and Antwerp from the perspective of your sector (e.g. mobility, logistics, energy, spatial planning, water, agriculture)?*
- *Which major trends and system innovations do you observe in 1) the region surrounding the corridor and 2) your sector?*
- *What is your vision on the power relations involved, especially regarding the issue of public-private cooperation?*
- *What is your desired future vision on the development of this corridor, and what/who is necessary to achieve that?*
- *Which suggestions do you have for our project on the Corridor Rotterdam-Antwerp, in terms of themes to be discussed and actors to be involved?*

These questions were not asked in chronological order; the sequence depended on the flow of the conversation, and many more questions were asked to go deeper in to certain statements. I especially used these interviews to learn more about the transport sector, spatial planning and power relations between public-private and NGO-actors. The interviews were recorded (but not transcribed) and reported based on notes taken during the interviews. These reports were analyzed and used as input for the DRIFT-report on the CoRA-zone (Te Riele et al., 2008). In this dissertation I have mostly used the insights and quotes from these interviews as a basis for empirical observations and analysis of discourses on sustainability mobility and spatial planning in general, and discourses on the Southern region of the Randstad in particular (Intermezzos A and B). Some of the interviews were also informative for the case-studies on the A15-project and the logistics sector (chapters 5 and 6). Table 36 specifies which interviews were used for which case exactly.

Project 6: Interviews on the A15-project

Between 2006 and 2008 I was involved in the A15-project (see chapter 5, section 5.1.2.). Besides participant observation in meetings, I helped to apply transition (management) concepts and to organize a so-called "innovation impulse" / "transition trajectory". At the end of 2008 I conducted interviews - together with another member of the "innovation-impulse-team" – in order to be informed about perceptions on the different "trajectories" in the A15-project and the power relations involved. In the interviews we especially focused on the tension between short-term and long-term objectives (as this was a recurring theme in discussions amongst participants and managers). A total of 11 interviews were held between November 2007 and July 2008 with: the two managers, one of their assistants, three members of the management team, one member of the steering board and four 'outside' participants of the innovation-impulse sessions. The interviews were semi-structured and based on the following set of questions:

1. *What do you believe to be the most important objective of the A15-project?*
2. *What is the relation between the short-term and long-term in the A15-project? (Can you distinguish a 'middle-term'? How is the relation between short- and long-term managed?)*
3. *How do you experience the position of the A15-project within Transumo?*
4. *(How) are transition (management) concepts applied in the A15-project?*
5. *Why was it decided to have two parallel trajectories, i.e. one 'classical' trajectory versus the 'transition-trajectory' / 'innovation impulse'?*
6. *What is the relation and interaction between these different trajectories?*
7. *What is (or should be) done with these different trajectories in the future?*
8. *What is your opinion of the knowledge diffusion in the A15-project?*
 - a. *Which knowledge is generated?*
 - b. *How is this generated knowledge shared and transferred?*
 - c. *How does this knowledge relate to the short- and long-term objectives in A15-project?)*
9. *What are the power relations in the A15-project?*
 - a. *What are the power relations between Transumo and the A15-project?*
 - b. *How are the internal power relations within the A15-project?*
 - c. *To what extent have/do you observe(d) changes in these power relations?*
 - d. *How do these power relations relate to the short-term and long-term in A15-project?*

The interviews were recorded (but not transcribed) and reported based on notes taken during the interviews. The insights and quotes from these interviews were used as input for the final report on the innovation-impulse (Avelino et al, 2007) and for a scientific paper/chapter on the A15-project (Avelino & Bressers, 2008, Bressers et al. forthcoming). In this dissertation, the interviews were used as a basis for empirical observations and analysis in the case-studies on both the Transumo program (chapter 4) and the A15-project (chapter 5).

"Open" interviews oriented towards PhD-research

Besides the interviews conducted in the context of specific action research activities (as specified so far), a total of 15 interviews were held that had no direct link to particular projects but were rather oriented toward the main theoretical and empirical research questions underlying this PhD-dissertation. These interviews were semi-structured based on a set of questions that depended on the phase of the research and/or the individual being interviewed. Overall, the questions revolved around the following themes:

- *Problem perceptions on the mobility sector*
- *(Future) visions on sustainable mobility*
- *System definitions of 'the mobility system' / 'logistics sector'*
- *Opinions on the concepts of transition (management) and 'sustainable mobility'*
- *Perceived power relations/dynamics between different sectors, organizations and actors*

Some of these interviews were recorded, of which two were literally transcribed, and others were reported and archived based on notes taken during the interviews. The insights from these interviews were mostly used for the empirical observations and analysis of discourses on (sustainable) mobility and transition (management), as discussed in Intermezzo A. Some of these interviews were also used to be informed about specific details underlying certain case-studies (e.g. political context and history). Table 36 specifies which of these interviews were used for which case exactly.

Finally, I would like to remind the reader that the interviews were not the main origin of empirical data. A majority of insights were also gained from *informal* conversation and participant / ethnographic observation at meetings (specified in appendix I), as elaborately discussed in the methodological chapter, the empirical chapters and the intermezzos. Moreover, a substantial part of the empirical observations is also based on document reviews (see appendix III).

Nr.	Date	Function interviewee	Organization interviewee	Usage in cases					Context (project number)
				Intermezzo A	Chapter 4	Chapter 5	Chapter 6	Intermezzo B	
1	8/9.03.2005	Director	Railcargo Information Netherlands	x				x	project 1
2	8/9.03.2005	Senior Advisor	Raad Verkeer & Waterstaat	x				x	project 1
3	8/9.03.2005	Secretary	Railforum	x				x	project 1
4	8/9.03.2005	Staff Member	Regio Randstad	x				x	project 1
5	8/9.03.2005	Staff Member	VromRaad	x				x	project 1
6	8/9.03.2005	Program Secretary	Connekt / Transumo	x	x			x	project 1
7	8/9.03.2005	Researcher & Manager	Deltamentopool / DeltaNet	x				x	project 1
8	8/9.03.2005	Senior advisory & Partner	Dialogic	x				x	project 1
9	18.06.2005	Former Staff Member	V&W "Het Nieuwe Rijden"	x					(open)
10	16.08.2005	Director	Transforum		x				(open)
11	27.09.2005	Medior Official	Haaglanden / Stedenbaan	x				x	(open)
12	21.11.2005	Senior Official	V&W	x					(open)
13	29.06.2006	Employee (lobbyist)	Zuid-Hollandse Milieufederatie	x				x	(open)
14	xx.06.2006	Senior Employee	9292ov	x					(open)
15	xx.xx.2006	Architect	West 8 Architecture					x	project 2
16	06.09.2006	Senior Employee	Zuid-Hollandse Milieufederatie					x	project 2
17	06.09.2006	Chair	ONRI					x	project 2*
18	21.09.2006	Head PR	Rotterdam Port Company	x				x	project 2
19	27.09.2006	Staff Member	Transforum					x	project 2*
20	06.09.2006	Director	Atelier Zuidvleugel					x	project 2
21	06.10.2006	Professor/ senior advisor	TNO / A15-project			x		x	project 2
22	30.11.2006	Advisor & manager	TNO / Logistical Networks Project	x	x				project 3
23	11.12.2006	Manager Innovation	Heijmans Infrastructure	x	x				project 3
24	11.12.2006	Ass. Professor/ Manager	Technical University Twente	x	x				project 3
25	12.12.2006	Professor & manager	TNO	x	x		x		project 3
26	12.12.2006	Staff Member	TLN	x	x		x		project 3
27	16.12.2006	Professor/ manager	NDL / Transumo	x	x		x		project 3
28	xx.07.2007	Senior Official	RDW	x					(open)
29	20.03.2007	Project Manager 1	ISL program / Connekt	x			x		(open)
30	20.03.2007	Financial Manager	ISL program / Connekt	x			x		(open)
31	20.03.2007	Program Manager	ISL program / Connekt	x			x		(open)
32	20.03.2007	Project Manager 2	ISL program / Connekt	x			x		(open)
33	20.03.2007	Project Manager 3	ISL program / Connekt	x			x		(open)
34	06.04.2007	Senior advisor	Buck Consultants	x	x		x		(open)

				Intermezzo A	Chapter 4	Chapter 5	Chapter 6	Intermezzo B	
35	30.05.2007	Professor CSR	Nyenrode Business University				x		project 4
36	30.05.2007	Director Logistics	Zeeman				x		project 4
37	01.06.2007	Senior Staff Member	Stichting Natuur & Milieu				x		project 4
38	08.06.2007	Chair	Platform Duurzame Mobiliteit	x	x		x		project 4
39	11.06.2007	Chair of the Board	The Greenery				x		project 4
40	13.06.2007	Director Logistics	Blokker				x		project 4
41	14.06.2007	Director	Heijmans Infrastructure				x		project 4
42	15.06.2007	Director Infrastructure	Gemeente Amsterdam				x		project 4
43	18.06.2007	General Manager	Norbert Dentressangle				x		project 4
44	08.10.2007	Chair	Platform Duurzame Mobiliteit	x	x	x		x	project 5
45	06.11.2007	Staff Member	V&W DGTL	x				x	project 5
46	07.11.2007	Research & PR Manager	Project Maincorridor Zuid	x				x	project 5
47	09.11.2007	Consultant	Royal Haskoning	x				x	project 5
48	20.11.2007	Process Facilitator	Ruimtemaker	x				x	project 5
49	23.11.2007	Senior Staff Member	Stichting Natuur & Milieu	x		x		x	project 5
50	23.11.2007	Chief Editor & Manager	VROM "Randstad 2040"	x				x	project 5
51	26.11.2007	Strategic Advisor	DHV	x				x	project 5
52	27.11.2007	Ass Professor & Manager	EUR / A15-project		x	x			project 6
53	05.12.2007	Senior Advisor	Zuid-Hollandse Milieufederatie		x	x		x	project 6*
54	18.12.2007	Senior Consultant	CE Delft		x	x		x	project 6*
55	19.12.2007	Senior Policy Advisor	DCMR / A15-project		x	x		x	project 6*
56	19.12.2007	Former Director	Rotterdam Port Company		x	x			project 6
57	09.01.2008	Chair	Platform Duurzame Mobiliteit		x	x	x		project 6
58	15.01.2008	Staff Member	TNO / A15		x	x			project 6
59	18.01.2008	Manager Sustainability	Deltalinqs		x	x			project 6
60	18.01.2008	Manager Accessibility	Deltalinqs		x	x			project 6
61	07.02.2008	Strategic Policy Advisor	Port Company Antwerp	x				x	project 5
62	14.02.2008	Senior Staff Members	ViM					x	project 5
63	15.02.2008	Program Manager	ISL program / Connekt	x			x	x	project 5
64	18.02.2008	Program Manager	Project Maincorridor Zuid	x				x	project 5
65	xx.06.2008	Professor & Director	DRIFT	x					(open)
66	07.07.2008	Senior Advisor/ Manager	TNO / A15		x	x			project 6
67	19.11.2008	Strategic Advisor	ISL program	x			x		(open)

Table 36. Interviews used for data-collection

APPENDIX III. SOURCES DOCUMENT REVIEWS

Table 37 specifies the sources of the document/website reviews that have been directly referred to in the intermezzos and empirical chapters. The way in which these documents were selected, collected and analyzed is explained in chapter 2 on methodology, and at the beginning of the individual empirical chapters.

For each document source the following items are specified: authors, year, title/description, and the cases for which the source was used (i.e. the empirical chapter or intermezzo in which the source is cited). Moreover, the document sources are categorized as follows:

- Policy documents & reports
- Project & program documents (officially published)
- Internal communication (e-mails, presentations, minutes, proposals, concepts)
- Websites

Table 37 does not give a complete overview of all the empirical documents I have read and used. For this research, I have studied and used far more empirical documents and websites than those that are mentioned in the table, including hundreds of emails, newsletters, invitations, reports, policy documents, minutes, memos and so forth (see chapter 2, section 2.3.1 on ethnography and 'immersion' in the Dutch mobility community). For practical reasons, however, I have *only* listed those documents and websites that are *directly cited* in the intermezzos and empirical chapters.

Nr	Document Review Sources cited in the chapters	Usage in cases				
		Intermezzo A	Chapter 4	Chapter 5	Chapter 6	Intermezzo B
Policy Documents & Reports						
1	VROM (2001) <i>4th Dutch National Environmental Policy Plan</i> , The Hague	x				
2	V&W/VROM (2004) <i>Nota Mobiliteit Naar een betrouwbare en voorspelbare bereikbaarheid</i> , The Hague	x				
3	V&W/VROM (2005) <i>Nota Mobiliteit Kabinetsstandpunt</i> The Hague	x				
4	V&W/VROM (2005) <i>Nota Mobiliteit Uitvoeringsagenda</i> , The Hague	x				
5	V&W/VROM (2006) <i>Nota Mobiliteit Na parlementaire behandeling vastgestelde PKB</i> , The Hague	x				
6	Sociaal-Economische Raad (2005) <i>Advies Nota Mobiliteit</i> , The Hague	x				
7	V&W-raad, VROM-raad en Energieraad (2008) <i>Een prijs voor elke reis. Een beleidsstrategie voor CO2-reducties in verkeer en vervoer</i> . Gezamenlijk advies van de Raad voor Verkeer & Waterstaat, de VROM-raad en de Algemene Energieraad. Koninklijke Broese & Peereboom: Breda	x				
8	CE Delft (2007) <i>Green4Sure. Het groene energieplan</i> . In opdracht van FNV, Greenpeace, Milieudefensie, Stichting Natuur en Milieu en WWF. Delft.	x				
9	EZ (2004) <i>Pieken in de Delta: Gebiedgerichte Economische Perspectieven</i> , The Hague					x
10	VROM (2008) <i>Structuurvisie Randstad 2040</i> , The Hague					x
11	Bestuurlijk Platform Zuidvleugel (2006) <i>Regionale Verkenning Stedenbaan</i> . The Hague					x
Project & Program Documents (officially published)						
12	Transumo (2004) <i>Projectplan. Betere Mobiliteit voor Morgen en 2010</i> .		X			
13	Transumo (2004) <i>Format Projectplan en Procedure besluitvorming</i> .		X			
14	Transumo (2006) <i>Jaarrapportage 2005 Nationale Netwerken</i>		X			
15	Transumo (2006) <i>Jaarrapportage 2005 Europese Netwerken</i>		X			
16	Transumo (2006) <i>Kwartaalrapportage Q1+2, 2006 Europese Netwerken</i>		X			
17	Nooteboom, S. & Van der Heijden, J. (2007) <i>Transitie als benchmark</i> . Transumo/ AT Osbourne		X			
18	CE Delft (2008) <i>The Planet Aspect of Sustainable Mobility: Top-down Vision-forming for Transumo</i> , Delft		X			
19	Transumo (2009), "Voorwoord en Inhoud" in: <i>Transumofootprint: de oogst van 5 jaar Transumo. > Sporen van Transumo: opbrengsten van kennisactiviteiten op het terrein van de transitie naar duurzame mobiliteit</i> ,		X			
20	Transumo (2009) <i>Strategic Knowledge Agenda Sustainable Mobility 2040. An impression of knowledge questions to achieve sustainable mobility in 2040</i> , Zoetermeer		X			

		<i>Intermezzo A</i>	<i>Chapter 4</i>	<i>Chapter 5</i>	<i>Chapter 6</i>	<i>Intermezzo B</i>
21	Transumo (2009). The Transumo Vision on 'Sustainable Mobility 2040'. An image of sustainable mobility in 2040 and a transition path towards it, Zoetermeer		X			
22	Transumo (2009) Aan de Slag met een Transitie-Aanpak > Project Transitieprogramma, Zoetermeer					
23	Transumo (2010) Transitiewegen naar Duurzame Mobiliteit. Samenvatting van transitie-aanpak binnen Transumo, Zoetermeer		X			
24	Bressers, N., Diepenmaat, H. and Pommer, J. (2008) Monitoringsrapport Transumo nr. 1. Erasmus Universiteit Rotterdam. Erasmus Centre for Sustainability and Management / Dutch Research Institute for Transitions		X			
25	Geerlings, H. (2005) Transumo Format Projectvoorstel Meerjarenplan & Jaarplan. Van Maasvlakte naar Achterland; duurzaam goederenvervoer als uitdaging.			x		
26	Transumo A15-project (2007) Van Maasvlakte naar achterland; duurzaam vervoer als uitdaging [public brochure nr. 1]			x		
27	Geerlings, H. and J. Lohuis (2007) Transumo A15-project. Van Maasvlakte naar achterland duurzame mobiliteit als uitdaging. Deliverable D14 Samenvatting 'eerste draai', januari-juni' 2007. Rotterdam					
28	Kuipers, B., T. van Rooijen en D.M. Vonk Noordegraaf (2008) Deliverable D15 Uitwerking Maatregelenpakket 2: 3D 'Duurzaam, dynamisch en gedurfd. Rotterdam/Delft			x		
29	Avelino, F., N. Bressers, H. Geerlings, J. Lohuis, I. Bouma, D.M. Vonk Noordegraaf & F. Soeterbroek (2007) Deliverable D16 Uitkomsten van de innovatie-impuls, Rotterdam			x		
30	Soeterbroek, F. (2009) Deliverable D23: Uitkomsten Bestuurlijke Innovatie, Rotterdam			x		
31	Geerlings, H., J. van Meijeren en F. Soeterbroek. M.m.v. R. Huybregts, B. Kuipers, H. Kul, M. Smaal, D. Vonk Noordegraaf (2009) Deliverable D25: Synthese: resultaten en aanbevelingen van 3 jaar studie. Rotterdam			x		
32	Transumo A15-project (2009) Van Maasvlakte naar achterland; duurzaam vervoer als uitdaging [public brochure nr. 2/ final brochure]			x		
33	Buck Consultants (2007) "Naar een Transportefficiënte Economie: Voorbereiding voor een programma", uitgevoerd in opdracht van: Ministerie van Verkeer en Waterstaat, Directoraat Generaal Transport en Luchtvaart, Nijmegen / Den Haag				x	
34	Connekt (2007) Offerte programma Transport Efficiënte Economie. Connekt,Delft.				x	
35	Public Brochure English Sustainable Logistics program				x	
36	Connekt (2007) Innovatieprogramma Duurzame Logistiek, Voortgangssrapportage Eerste half jaar 2007. Connekt,Delft.					

		Intermezzo A	Chapter 4	Chapter 5	Chapter 6	Intermezzo B
37	Connekt (2008) Innovatieprogramma Duurzame Logistiek, Beleidsmatig/inhoudelijke Verantwoordingsrapportage 2007. Connekt,Delft.				x	
38	Connekt (2009) Innovatieprogramma Duurzame Logistiek, Beleidsmatig/inhoudelijke verantwoording over 2008, in opdracht van: Ministerie van Verkeer en Waterstaat. Connekt,Delft.				x	
39	Minnesma, M., Rotmans, J., te Riele, H., Avelino, F., van der Brugge, R., Driessen, D. & Timmermans, J. (2007) <i>Systeem Ruimtelijke Orde Vanuit Transitieperspectief</i> , DRIFT/Rotterdam					x
40	Van Eijndhoven, J., Avelino, F. Terwindt, C., Zijlstra, T., Rotmans, J., & Loorbach, D. (2009), <i>De Nieuwe Ruimtelijke Orde: Verbonden mensen en verstrengelde activiteiten (Connected people and Entwined Activities)</i> , DRIFT Rotterdam, December 2009					x
41	Qualitime Magazine #8 (2005) and # 9 (2006)					x
Internal Communication (e-mails, presentations, minutes, proposals, concepts)						
42	Email from member management-team Transumo. 27.04.2007		X			
43	Resignation letter theme-leader Logistical Networks. 21.09.2006		X			
44	Email project-leader Logistical Networks. 20.12.2006		X			
45	Email project-leader A15-project. 18.01.2007			x		
46	Minutes meeting A15-project. 22.06.2007			x		
47	Presentation A15-project. 24.11.2006			x		
48	Working paper project-leader A15-project. <i>A Renaissance in Understanding Technology Dynamics? The emerging concept of transition management in transportation</i> [published in 2009 in Transportation Planning & Technology]				x	
49	Proposal & contract on my role in ISL (Voorstel & Offerte Bijdrage Innovatieprogramma Duurzame Logistiek). 20.04.2007				x	
50	E-mail program manager ISL to me. 29.03.2007				x	
51	Individual vision documents on sustainability logistics by ISL-team-members. Augustus 2007				x	
52	Concept position paper ISL-program. 3.10.2007				x	
53	Concept position paper vision document ISL. November 2007				x	
54	Project Proposal Agenda-Setting. 10.09.2007				x	
55	Project Proposal Innovation.				x	
56	Avelino, F. (2007) <i>Het Innovatieprogramma Duurzame Logistiek en Transitie management. Gebruik de Kennis van Kracht...</i>				x	
57	E-mail dialogue with manager ISL-program. 17-19.09.2007				x	
58	E-mail reflection on round table by ISL team-member. 05.07.2007				x	

		Intermezzo A	Chapter 4	Chapter 5	Chapter 6	Intermezzo B
59	Email program manager to ISL-team, 17.07.2007				x	
60	E-mail project-leader business profiling 28.07.2007				x	
61	Email project-leader agenda-setting, 28.7.2007				x	
62	Verbaan, W. (2008) Bevindingen Innovatieprogramma Duurzame Logistiek. Rapportage t.b.v. teamoverleg, maart 2008. Vertrouwelijk.				x	
63	Memo "Inrichting Proeftuin Zuidvleugel", 2005					x
64	Transumo Presentation. Proeftuin Zuidvleugel.Stand van zaken kwartiermakerschap. May 17, 2005					x
65	Written reactions from Transumo board-members to DRIFT report on mobility in the South Wing. E-mail 12.06.2009					x
Websites						
	http://www.connekt.nl http://www.deltametropool.nl/nl/index http://www.duurzamelogistiek.nl/toolbox/duurzaam-inkopen/ http://www.energietransitie.nl/platforms/duurzame-mobiliteit http://www.green4sure.nl/ www.drift.eur.nl http://www.kenniscentrumtransities.nl/ http://www.midzomern8.nl/ http://www.qaztion.nl/sfeerimpressie.wmv http://www.qaztion.nl/sfeerimpressie2.wmv http://www.rijksoverheid.nl/onderwerpen/randstad/randstad-urgent http://www.senternovem.nl/ http://www.senternovem.nl/Transitienetwerk/ http://www.tno.nl/ http://transitionsnetwork.org/ www.transitionpractice.nl http://www.transumo.nl/ http://www.transumofootprint.nl/ http://www.traverse.nl.sharepointsite.com/Traverse/Platforms/ www.urgenda.nl					

Table 37. Sources document reviews (cited in chapters)

INDEX OF ABBREVIATIONS

Abbreviations	Organization / Description
BSIK	Subsidy Regulation of Dutch Government for Applied Research
BuZa	Ministry of Foreign Affairs,
BZP	Bestuurlijk Platform Zuidvleugel (Government Platform South Wing)
CCT	Competence Centre for Transitions
Connekt	Public-private platform for traffic & transport issues
CoRA	Corridor Rotterdam Antwerp
DRIFT	Dutch Research Institute for Transitions
EZ	Former Ministry of Economic Affairs
EUR	Erasmus University of Rotterdam
Fin.	Ministry of Finance
ICIS/KIS	Former interdepartmental working group in charge of BSIK
IPE	Interdepartementale Programmadirectie Energietransitie
ISL	Innovation Program Sustainable Logistics
KCT	Knowledge Centre for Transitions
KSI	Knowledge Network System Innovations and Transitions
MLP	Multi-level Framwork (transition studies)
Multi-PIT	Multi-level Power Framework (this thesis)
LNV	Former Ministry of Agriculture, Nature and Food Quality
OCW	Ministry of Education, Culture and Science
PDM	Platform for Sustainable Mobility
Province ZH	Provincie Zuid-Holland (Provincial Government South-Holland)
RWS	Rijkswaterstaat/ Execution department of public works and water management
SenterNovem	Former Execution Agency of EZ, now part of Agentschap NL/ Agency NL
TM	Transition management
TNO	Research institute for applied scientific knowledge
V&W	Former Ministry of Transport, Public Works and Water Management
VWS	Ministry of Health, Welfare and Sport
VROM	Former Ministry of Housing, Spatial Planning and the Environment

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AUTHOR'S BIOGRAPHY

Flor Avelino (1981) was born in Setúbal, Portugal, and came to the Netherlands at the age of six. After living in The Hague for 12 years, she moved to Utrecht for undergraduate studies in Social Sciences at *University College Utrecht*. In 2005 she graduated at the *University of Leyden* with a Master of Arts in Political Science. Flor started her professional career at the *Dutch Research Institute for Transitions (Drift) / Erasmus University of Rotterdam* in 2005 as an action researcher and advisor regarding the management of sustainability transitions. She has worked as a strategic transition advisor for several governmental organizations and sustainability projects, and is involved in coordinating educational activities at Drift. Both in research and in personal life, she is involved in grassroots initiatives geared towards sustainable development, having as primary ambition to strengthen social movements that are not only critical in their resistance, but also provide alternative images and practices.

For the future, Flor is especially interested in further empowering the ecovillage movement, by (re)connecting and reinventing different fields of science, entrepreneurship, and education. Her image of the future is to live and work in a vibrating and modern ecovillage that harbours an international institute on sustainability research and life-long-learning. A constant element that runs through all these activities is a fervent passion for the act of writing, be it academic, pragmatic, or fictional. One day, Flor hopes to capture both academic and pragmatic experiences in a fiction novel on the modern day politics of sustainable development; thereby striving to translate the often abstract and technical discourses into a story that more people could identify with, including the struggles and dangers, as well as the passions and delights, of our modernity challenges, and the future that is yet to come.