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## Justifying mega-projects

### An analysis of the Swedish high-speed rail project

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# Justifying Mega-Projects

## An Analysis of the Swedish High-Speed Rail Project

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ERIK RONNLE | DEPARTMENT OF BUSINESS ADMINISTRATION



## Justifying Mega-Projects



# Justifying Mega-Projects

An Analysis of the Swedish High-Speed Rail Project

Erik Ronnle



**LUND**  
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DOCTORAL DISSERTATION

by due permission of the Department of Business Administration, School of  
Economics and Management, Lund University, Sweden.

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<p><b>Abstract</b></p> <p>Mega-projects are a growing phenomenon worldwide. More and more projects are started and they grow ever bigger in size. At the same time, there is overwhelming evidence that mega-projects tend to run late, overrun in terms of costs and fail to deliver the expected benefits. Paradoxically, more and more money is invested in projects that fail to deliver on their promises.</p> <p>This dissertation analyses how mega-projects are justified through a case study of the Swedish high-speed rail project and the National Negotiation on Housing and Infrastructure (Sverigeförhandlingen). The Swedish high-speed rail project is arguably the biggest project ever initiated in the country and fits the definition of a mega-project. It is planned to connect the three largest cities Stockholm, Gothenburg and Malmö with high-speed rail tracks at an estimated investment cost of 230 billion SEK (€23.1 billion). The project is highly controversial in the public debate. It impacts a large number of people and involves substantial financial commitment. Interestingly, it is also heavily unprofitable in cost-benefit analysis calculations. Based on these calculations, the project is unprofitable and should be cancelled. Still, the project has been allowed to continue by two consecutive governments. Analysing how this project is justified makes it possible to address the wider issue of why mega-projects continue to hold such appeal among decision makers despite their track record.</p> <p>The dissertation finds that the Swedish high-speed rail project is being justified based on a combination of strategies: widening the scope, producing encouraging numbers, creating and mobilising stakeholders, and arguing using a policy narrative. It shows how the project leadership skilfully bypasses criticism from cost-benefit analysis and succeeds to gather support for the project despite the numbers.</p> <p>The research has been done at Lund University School of Economics and Management and K2 – the Swedish Knowledge Centre for Public Transport.</p>		
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# Justifying Mega-Projects

An Analysis of the Swedish High-Speed Rail Project

Erik Ronnle



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# Preface

Four years ago, before embarking on the PhD journey that ends with this dissertation, I worked in a large consultancy company. Trained as an environmental engineer, I was part of an environmental management team and was thrown into a wide set of projects concerning environmental economics, urban development, and renewable energy to name a few topics. In this occupation, I sensed that while we strived to be objective and took pride in following sound methodological principles, our customers often had a quite outspoken interest. To put it another way, the reason for hiring a consultant to make a report was not necessarily to guide a decision but to play into a complex decision-making process. Projects were almost always surrounded by political complexity. A wind power company needed to gather support for a project and wanted us to demonstrate the benefits. An environmental department in a municipality wanted to show the value of environmental protection in order to receive political support and funding. More often than not, it seemed that what we produced was well-founded arguments intended to justify projects, decisions, and actions. To a person with an engineering education, this was partly a frustrating experience but also intriguing. Like many fresh graduates arriving in work from university, I found that there was a lot more to real-life decision-making processes than merely solving analytical problems.

While this aspect of work is perhaps not talked about so much in undergraduate studies in business and engineering, it is evidently important in real life. Some would say that it is even growing in importance. The economist Deirdre Nansen McCloskey has argued that at least 25 percent of national income in a modern economy comes primarily from convincing other people through argumentation, rhetoric, or “sweet talk” (McCloskey, 2011). This might sound provocative, but if you think about it, it makes sense: salespeople and lawyers might seem obvious examples, but what about a doctor convincing a patient to change lifestyle, or a teacher trying to motivate students to study? In research we do it all the time, arguing for the legitimacy of our research and trying to convince our peers that our results are interesting and our methodology sound. Decision-making processes, as I observed in my experience as a consultant and

as we will see further on in this dissertation, can sometimes be better described as processes for building commitment for a certain alternative than as processes for choosing between alternatives.

This dissertation is my attempt to analyse this justification process. I hope this introduction has justified why you should keep on reading.

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Stockholm, 2018-10-19

Erik Ronnle



# 1 Introduction

In the world today, there are rarely any spaces left where projects can be performed without permission from anyone else. Whether inside organisations or in private life, large or small, there are always external stakeholders that need to, if not give permission, at the very least acquiesce to whatever it is you want to do. In short, for a project to be approved, someone needs to make an argument in its favour (Corvellec, 2007).

For government authorities, the ability to argue is perhaps even increasing in importance. While the traditional bureaucratic model describes government as a top-down and authoritative monolith, recent developments towards decentralisation and network governance has made governing the public sector more complex (Hill & Hupe, 2002; Osborne, 2006). Gone are the days, if they ever existed, when the central government could command and control. Instead, we find ourselves in a situation where everything needs to be negotiated, anchored and accepted by external parties. These are sometimes labelled stakeholders, defined as people and organisations that are affected by an organisation's actions and, in some cases but not all, have the possibility to in turn affect the organisation (Freeman, 1984).

The larger the intended action is, the greater the number of stakeholders and the more likely they are to be affected, the more central the argumentation for the project is likely to become. The largest and most complicated projects are sometimes labelled mega-projects. Mega-projects have been defined as “large-scale, complex ventures that typically cost US\$1 billion or more, take many years to develop and build, involve multiple public and private stakeholders, are transformational, and impact millions of people” (Flyvbjerg, 2014). Not only are mega-projects large, they are also becoming more common, leading to ever larger sums of money being invested in mega-projects globally each year. As mega-projects are mostly the result of public investment, they tend to have high political profile (Priemus & van Wee, 2013). At the same time, however, there is growing concern that mega-projects seldom deliver on their promises. In the field of infrastructure, studies have indicated that benefits are often over-estimated and costs under-estimated, leading to poor project

performance (Flyvbjerg, 2009; Cantarelli & Flyvbjerg, 2013). As such, we find ourselves in the paradoxical situation where we devote enormous and increasing resources to projects that often fail to deliver the value we expect from them.

Earlier research on mega-projects has emphasised the role of calculations in explaining why mega-projects continue to hold such appeal among decision makers. In this line of research, the problem is described in terms of influential calculations, such as cost-benefit analysis (CBA), that are biased and that this bias leads decision makers to approve projects under the auspices that they are good. A fair unbiased evaluation, however, would reveal that the projects are in fact bad. This reasoning assumes that cost-benefit analysis is important for decision makers, that it provides a fair evaluation of projects, that it is biased today, and that it can be made unbiased through improved methods. Consequently, this line of research has developed methods for de-biasing cost-benefit analysis and argues that implementation of such methods will solve the problems of cost overrun and benefit shortfall.

This dissertation is based on a case study of the Swedish high-speed rail project and the National Negotiation on Housing and Infrastructure intended to bring it about. The Swedish high-speed rail project is arguably the biggest project ever initiated in the country and fits the definition of a mega-project. It is planned to connect the three largest cities Stockholm, Gothenburg and Malmö with high-speed rail tracks at an estimated investment cost of 230 billion SEK (€23.1 billion) (SOU, 2017:107). The project is highly controversial in the public debate. It impacts a large number of people and involves substantial financial commitment. Interestingly, it is also heavily unprofitable in cost-benefit analysis calculations, with a Benefit-Cost Ratio of 0.6 (Trafikverket, 2016). This means that in the economic models, the project is expected to yield only 60 cents of value for each euro spent. Based on these calculations, the project is unprofitable and should be cancelled.

Traditionally, Swedish transport policy has been characterised by a strong technocratic tradition (Thoresson, 2011; Hultén, 2012). This suggests that the low Benefit-Cost Ratio would be an important obstacle for the project, in line with what earlier research on mega-projects assumes. This project is therefore an interesting case to explore as, judging by the analysis material, it seems obvious that the project should have been closed down already. Still, it has continued under two different governments. As such, there is a need to explain the attraction of the project that goes beyond formal instrumental-rational decision-making models. In doing this, it is possible to address the wider issue



of why mega-projects continue to hold such appeal among decision makers despite their track record.

The over-arching purpose of this dissertation is to analyse how mega-projects are justified. The dissertation is a compilation based on four papers studying the Swedish high-speed rail project. Each of these contributes to addressing the overarching purpose from different angles.

The first paper deals with the analysis material produced for the negotiation. The purpose is to describe the benefit analyses in the Swedish high-speed rail project and explore what role these analyses can play in the decision-making process. It finds that the reports are methodologically inconsistent and insufficient for decision making.

The second paper continues by asking what role the benefit analysis reports played in the decision-making process. The purpose is to investigate how the participants perceived the purpose and use of an alternative benefit analysis intended to complement cost-benefit analysis in the Swedish high-speed rail project. It finds that the reports were still used opportunistically to argue for the project, and that producing the reports itself served a purpose through building political momentum.

Given that the analysis material fails to provide sufficient evidence that the project is worthwhile, the question arises how a project with all numbers against it can still survive. The purpose of the third paper is to describe the narrative of the Swedish high-speed rail project and to analyse how it contributes to the political survival of the project. It finds that the project leadership committee is advocating the project on the basis of a narrative that on several important points contradicts the results of the cost-benefit analysis.

The fourth study investigates the extent to which public sector stakeholders' perceptions of the project are based on the policy narrative and the cost-benefit analysis respectively. It finds that the project leadership committee has been successful, as the stakeholders are significantly more likely to agree to statements based on the policy narrative and significantly less likely to agree to statements based on the cost-benefit analysis for the project. However, it also finds that there is a difference in perceptions between representatives for different political levels, where the local level respondents (that stand to gain a lot from the project) are positive, while the national level respondents (that are going to make decisions on funding) are more sceptical. This suggests a degree of opportunism where arguments are accepted to support a position

regardless of whether they are based on a policy narrative or a cost-benefit analysis.

The rest of the dissertation is structured as follows. The methodological approach is outlined in chapter two. This gives an overview of how the making of this dissertation has proceeded. The details on how the studies were performed are found in the method sections in each paper. Chapter three introduces the theoretical framework for the dissertation. As in the case of method, separate theoretical frameworks for each study are found in the papers. Chapter four introduces the case study, and chapter five makes a summary of the findings of the papers. Chapter six analyses the findings and discusses the implications for research and practice. The contributions of the dissertation are summarised in chapter seven. The research papers are appended at the end. The papers are possible to read one by one and independently of the dissertation.

## 2 Methodological approach

This chapter presents the research method applied in this dissertation. The chapter is divided into four sections. The first introduces case study methodology. The second discusses the concept of reflexivity and how it has been used in the research process. The third describes how the four papers in the dissertation evolved. The fourth, finally, discusses the concept of rationality and the methodological choices made concerning this in the interpretation of the research findings.

### 2.1 Case study methodology

This study is a case study. There are a number of issues regarding the case study method that need to be addressed by anyone claiming to perform case study research. The first, and most fundamental, is to define what a case study really is (Ragin, 1992). Yin (1994) notes that the word case is used differently in different types of research. In qualitative research, according to Ragin (1992) a case is often used to describe a unique situation that is used by the researcher to present something. The case is argued to be typical or exemplary or extreme or theoretically decisive in some way. The case in this dissertation is argued to be a case of how mega-projects are justified. While this is a specific interpretation and focus from the empirical point of view, the findings are used as a basis for a discussion of a wider development in infrastructure policy and in mega-project research in general.

This leads further into a second issue: the question of reliability and whether it is possible to generalise from a case study (Yin, 1994; Flyvbjerg, 2006). According to Flyvbjerg (2006), this is indeed possible, even in a strictly positivist sense. A carefully chosen case study performed in depth can have considerable impact if it shows that a generally held belief or theory does not hold in one specific, but crucial, case. The case study becomes a black swan that disproves the theory. The trick here is to choose the case study in a way

that really puts theories to the test (Flyvbjerg, 2006). Using the same strategy, a carefully chosen case study can provide a strong argument for a proposition even without presenting a truly black swan. The case study might perhaps not prove generalisability in this case, but it can certainly point other researchers in a new direction and have profound impact.

The empirical case in this dissertation arguably provides such a crucial case. As mentioned in the introduction, earlier research on mega-projects has emphasised the importance of cost-benefit analysis in explaining why mega-projects are approved. The idea is that poor projects are made to look good on paper and are therefore approved on false grounds. The case of the Swedish high-speed rail project, however, already looks poor in the cost-benefit analysis and its persistence thus calls for a different explanation. The context and characteristics of this particular case makes it interesting as it provides the possibility to suggest additional explanations and thereby to enrich extant research on mega-projects.

The key to a successful case study is the depth and detail that the method allows (Flyvbjerg, 2006). Looking in depth at a phenomenon ideally makes it possible to fully become an expert in a field in the sense of going beyond first impressions and understanding deeper mechanisms. This can be useful when comparing with other cases to find similarities and differences and in finding generalisable and theoretical implications. A case study might thus through the focus on detail, somewhat paradoxically, be instrumental in allowing the researcher to gain insight into wider issues beyond the case itself (Stake, 1995). The focus on detail also enhances the possibility for the researcher to ask truly interesting questions to the material (Flyvbjerg, 2001). Coming back to Ragin (1992), it becomes possible for the researcher to understand what the case really is a case of, and thereby produce more interesting research. As implied by this, however, the realisation that a case evolves as new details become available also leads to a complication: a case can potentially be interpreted in several different ways depending on what details are focused on (Yin, 1994). As the case study unfolds and the researcher gets further into it, it is possible that the interpretation of the case changes. What is initially considered to be a case of something might turn out to be a case of something else. There is even a potential for a case to be a case of several different things at the same time (George & Bennet, 2005). Having an open mind and following where the case leads is an important skill for the case study researcher in order to find not only one but also the most interesting interpretation of the case (Ragin, 1992). In this dissertation project, this is reflected in the evolution of the theoretical

framing and interpretation of the case through the process, as is discussed further in the next section on reflexivity. The interpretation of the case has evolved through the work and was not given from the start. On the contrary, the interpretation is possible only when the details of all findings of the case study are put together.

## 2.2 A reflexive approach

The methodological approach and understanding of the case in this dissertation project has evolved from a need to look at the research findings with different theoretical lenses in order to make sense of them. The papers are diverse in theoretical perspective, but study the same process and to some extent use the same empirical material. As such, the idea has been to use different theoretical frameworks to complement rather than exclude each other. This outlook on the research process is inspired by the concept of reflexivity developed by Alvesson and Sköldbberg (2009).

This research has employed a reflexive approach in the sense that it has actively followed leads from the empirical material and repeatedly contrasted it with theoretical lenses of various kinds, as will be evident to the reader of the papers. The work has thus not followed an idealised form of research based on hypothesis testing, but rather employed a reflexive use of the term re-search: continually re-searching, or searching again, for new ways of interpreting the empirical material. As such, the process can be described as emerging and evolutionary in contrast to idealised and controlled. In this sense it has combined a reflexive approach to theory with an evolutionary understanding of how the case study can be interpreted.

Yin (1994) defines three categories of case studies within the social sciences: exploratory, descriptive and explanatory. Case studies generally answer the three questions what, how and why, where the two latter are more connected to explanatory studies while the first is connected more to exploratory and descriptive studies. The case study in this dissertation is explanatory as it aims to explain how mega-projects are justified based on the case of the Swedish high-speed rail project. The approach of using several theoretical lenses to contribute to the explanation is a method that is also fruitful in explanatory case studies, as demonstrated by Allison and Zelikow (1999) and similar to the concept of theoretical triangulation as put forward by Patton (1987).

## 2.3 The four papers

The first approach to be applied to the project was an instrumental-rational decision-making approach. As this approach emphasises the need for a formal basis for decision-making, this led to what became paper one where (part of) the analytical basis of the project is examined through a document study. The study focuses on the benefit analysis reports sent in by the stakeholders in the project. The 57 reports were analysed based on explorative reading and re-reading, where similarities and differences were highlighted in terms of methodology, structure and content. As is evident from the results of this study, however, the instrumental-rational approach is insufficient to explain what was actually going on. Even as the contents of the studied analysis reports were clearly insufficient as bases for decision-making, it seemed clear that they were still important for the project in some other way. As discussed by Prior (2003), a study of documents should not only be concerned with content but also with the context that the documents are situated in. This led further into questions about the analysis reports in their context. For what purpose were they produced and what did they mean in the present? In order to go deeper into this, the document study was complemented with interviews. As suggested by Kvale (2007), interviews may allow the researcher to reveal the meaning of documents as perceived by their writers and readers. This is important considering that writers and readers often stand in a dynamic relationship of co-producing the meaning of the documents in their context (Prior, 2003).

At first, interviews were made with the project leadership representatives. These interviews gave mixed results and illustrate a clear challenge with the interview methodology. Given the earlier knowledge about the document contents it was surprising to find that the project leadership representatives still tried to maintain the instrumental-rational decision-making model to describe what they were doing. In retrospect, it seems likely that they were telling a narrative reflecting a politically favourable representation (Alvesson, 2011) where they were rationalising their behaviour in the light of what they thought was expected of them as government civil servants. The main theme was that while these analysis reports were not perfect they were at least something. Interestingly, however, they also mentioned that the reports were important for political purposes (justifying the project to decision makers further up the hierarchy) and to make the local governments active and alert in the process. This revealed a crack in the rationalistic façade, allowing a glimpse of a deeper motive.

In order to complement the project leadership's views, interviews were also made with representatives for the local governments that had participated in making the reports. They gave a rather different picture. In their view, the instrumental-rational decision-making approach was completely missing the point. They saw no logic, had received contradictory instructions, and had generally come to the conclusion that the report procedure was part of a negotiation game on co-financing. The local governments had not seen the purpose of the reports as a way to make them committed but some of them had started thinking about societal development in new ways along the lines of the project logic (connecting housing construction and infrastructure for example). By contrasting different stakeholders' views with each other and with the results of the document study, a richer understanding of the political nature of the project started to form. To get an outsider perspective on the project, an interview was also conducted with a senior consultant who had previously worked with one of the prominent project leadership members of staff and had also helped some of the local governments with their reports. He supported the tentative conclusion that the reports had been worthwhile for the project leadership but in ways totally unrelated to analysis for rational decision making. Instead, he argued, the reports had been designed to make the local governments interested, committed and to provide good arguments for why the project was worthwhile, despite being unprofitable in standard cost-benefit analysis.

Complementing the document studies and interviews, observations were made at a number of conferences where the project was presented by politicians, lobbying groups, critics of the project and so forth. These gave a sense of the momentum that the project leadership managed to build. A great number of civil servants from local governments all along the proposed routes (and some from other places) were present. Many of them were deep down sceptical towards the project but felt that something big was happening and that this was important to be part of. The local governments who were part of the plans showed exhibitions on how high-speed rail would make their cities or towns great. There was a clear sense of hype in the air at all these events. The critics meanwhile maintained that the numbers did not add up and that the costs were simply unjustifiable. They were, however, generally not present at the larger events.

Literature on interviews in qualitative research is sceptical towards the interview as a way of gathering information in the direct sense (Alvesson, 2011). This has several reasons: interviewees may be unwilling to talk about

things they find embarrassing; might want to use the interview as an opportunity for political action, delivering a message; or simply might not fully understand the situation at hand. These problems are all present in the interview material in this case. It is clear from the interviews that the interviewees are not to be regarded as pure information providers. Members of the project leadership defend their work as rational in the traditional sense, despite all evidence to the contrary. The local government interviewees have understood that the reports are difficult to use and are very critical towards the methodology but have not quite grasped that there could be organisational motives. However, when these two groups are contrasted and the outsider perspectives of a consultant, a document study, and some observations are added, there is a possibility to find interesting connections. The gathering of different perspectives by collecting information from different sources, as advised by for example Patton (1987) and Yin (1994), has as such been fruitful and a key component of the methodology. The complementary use of document studies, observations and interviews has added credibility to the material. The empirical sources all give different parts of the puzzle, and it is only by putting them together that the conclusions in the dissertation project can be drawn.

The results of papers one and two show that the analysis reports made for the project are insufficient for decision making (Ronnle, 2017a). Rather, they appear as biased and are obviously being used for political purposes (Ronnle, 2017b). The question that arises here is, considering that there are no numbers to support the project, what is it that justifies it? The third paper (Ronnle, 2018a, forthcoming) analyses the same material as papers one and two, complements it with some media reports, debate articles and lobbying group reports, and applies a new theoretical lens. The idea is to describe the narrative that is used to argue for the project and to analyse how this contributes to its political survival. This provides an alternative theoretical understanding of the project and indicates that there are underlying beliefs and storylines in infrastructure politics that make it possible to argue for projects even when all existing evidence is against them.

Interestingly, many of the claims made in the narrative are clearly contradictory to the claims made in the instrumental-rational analyses and the cost-benefit analysis. The fourth paper (Ronnle, 2018b, forthcoming), therefore, analyses to what extent the respective claims made by the narrative and the cost-benefit analysis correspond to the views held by the decision makers involved in the project through a survey study. This study thus attempts



to test the tentative result that the narrative is an important component for understanding the relative success of the project. The fourth paper also introduces yet another source of empirical data which solidifies the empirical base for the dissertation further.

Taken together, the dissertation has used multiple theoretical approaches, multiple methodological approaches, and multiple empirical sources in order to arrive at an overall interpretation of the case study. The approach can thus be seen as employing what Patton (1987) describes as triangulation in three dimensions: theoretical triangulation, methodological triangulation, and empirical triangulation. By using triangulation in these dimensions, a richer understanding of the case study is produced and has continued to evolve during the dissertation project. The research process has thus followed the advice of Ragin (1992) and Yin (1994) among others, to keep the case open to re-interpretation when new information becomes available. Patton (1987) suggests a fourth dimension of triangulation, involving more than one researcher, in order to deal with the potential source of bias inherent in the researcher himself. While this is perhaps partly mitigated by the research process of peer-review and, in this case, supervision of doctoral students, the dissertation as it stands is still mainly the outcome of the work of one person.

## 2.4 Assumptions regarding rationality

This dissertation assumes actors to be boundedly rational. This means that they are assumed to be rational within the limits placed on them by accessibility of information, cognitive abilities, time and so forth (Simon, [1945] 1997). Following this, an important methodological choice in this dissertation project is that the actors in the process are assumed to have acted rationally, at least in some dimension. Even though the official version of events is not accepted as given, there is a tendency in the work to try to find rationality, even if it is different from the rationality assumed at first sight. However, it is not necessary that the world behaves in such an ordered fashion. There is a tendency for researchers to look for, or perhaps even construct, patterns where there is in fact chaos (Alvesson & Sköldberg, 2009). A different interpretation of the findings would be that the actors strive to uphold a façade of rationality while they are in reality trying to get to grips with a process they don't understand about a project they by definition cannot know very much about because it lies so far into the future. The project leadership could certainly be

interpreted as simply naïve and not knowing how to deal with the situation. Perhaps they didn't understand how to make the analysis reports and how to compare them. Within the field of policy analysis and decision making, there are certainly alternative theoretical frameworks that would make such an interpretation possible (March, 1991). Here, a choice has been made to interpret the actors in the process as rational rather than irrational, and pattern has been given privilege over chaos when choices have had to be made.

The answer to this criticism would boil down to a fundamental issue of social research, namely the question of trustworthiness (Alvesson & Skoldberg, 2009; Cornelissen, et al., 2012). What all research by definition needs to do is to argue for its relevance and use sound methodological principles and arguments to back up its conclusions. This can be described as a legitimacy-seeking process that puts restrictions on how studies are conducted, for better and for worse (Cornelissen, et al., 2012). This dissertation project is no different in this respect. What reflexive methodology suggests is that research by no means can claim to find one official truth, but rather to make different interpretations and provide perspective on social reality (Alvesson & Skoldberg, 2009). The dissertation project makes an argument for an interpretation based on assuming a certain type of rationality among the actors in the process. A study with a different outlook, purpose and methodological starting point would make another conclusion possible. This is not to end every debate with the realisation that everyone will make a different interpretation, but rather to admit the importance of the complexity and the assumptions that are necessarily there. Hopefully, the findings in this dissertation project can inspire and contribute to an interesting conversation about how mega-projects are justified.

# 3 Theoretical framework

This chapter presents the theoretical framework of this dissertation. The theoretical framework here is the one used for the analysis and discussion of the overall findings of the dissertation. The theoretical frameworks for the papers are found in each appended paper. The first section of this theoretical framework gives an overview of research on mega-projects, which is the theoretical field where this dissertation makes its main contribution. The following sections introduce theory on decision making and on how decisions are justified.

## 3.1 Mega-project research

This dissertation deals with a mega-project. As mentioned in the introduction, mega-projects are a growing phenomenon in the world today (Flyvbjerg, 2014). Flyvbjerg (2014) claims that a conservative estimate of the global mega-project market is between US\$6 and US\$9 trillion per year or approximately 8% of the total global gross domestic product if a wider definition including infrastructure, oil and gas, mining, aerospace, defence, ICT, supply chains, mega-events and so forth is used. Only transport infrastructure spending was US\$1,15 trillion in 2013 (McKinsey Global Institute, 2016). By any standard, mega-projects are as such not only growing but already a major issue in the world.

The growth and size of spending on mega-projects are particularly important to talk about because mega-projects are failing to such a large extent. Cost-overruns and benefit shortfalls are not only common, but have even been described as the rule (Flyvbjerg, 2014). Only one project out of ten succeeds in keeping its budget. Similarly, only one out of ten projects succeeds to deliver the promised benefits, and only one out of ten is finished on time. Taken together, an iron law of mega-projects can be formulated as “over budget, over time, over and over again” (Flyvbjerg, 2011). Failure is in this line of research

defined as missing targets in terms of costs, benefits and time with certain definitions and specified time perspectives. This means that it could be possible to dispute some of the alleged failures by bringing in additional information, alternative perspectives and so on. Still, it seems fair to say that there is a problem of mega-projects often failing to deliver what is expected to the expected cost in the expected time.

The reason mega-projects are failing like this can be attributed to a phenomenon called the planning fallacy. The planning fallacy is a term used to describe a confident belief that one's own project will proceed as planned, even while knowing that the vast majority of similar projects have run late (Kahneman & Tversky, 1979; Buehler, et al., 1994). What is necessary for the planning fallacy to work has been described as an optimism bias sometimes argued to be an evolutionary trait inherited from our ancestors. Optimism is positive as it encourages us to push forward and try to do new things even if the chances of success seem slim. When this works, it has even been described as a benevolent hiding hand that leads us to undertake projects that we would never have undertaken if we had known the hardships to come (Hirschman, [1967] 2015; Flyvbjerg & Sunstein, 2016). The benevolent element is that we similarly underestimate human ingenuity in finding solutions to unexpected problems. As projects are started based on optimism, they might then be completed, against all odds, thanks to new and unexpected solutions that come up just when everything seems lost. However, in the case of mega-projects, the benevolence of this hiding hand can be questioned considering the track record. Instead, what we have is perhaps a malevolent hiding hand luring us to take on new projects under the auspices of future solutions that never materialise (Flyvbjerg & Sunstein, 2016). What we are left with are only the negative effects.

Optimism bias thus entails the tendency of planners to underestimate the problems a project is likely to run into. In the field of mega-project research this can possibly be complemented by a more devious explanation. As projects are often made to compete for funding, there is a clear incentive for planners to actively distort the analyses produced in anticipation of a project in order to get the project approved. Once initiated, the problems turn up and the over-optimistic analysis turns out to be wrong. This explanation of why mega-projects so often fail to deliver the expected results is termed strategic misrepresentation (Flyvbjerg, 2009) and relates to a discussion on manipulation of analysis for decision making (Wachs, 1989; Porter, 1995) that will be further elaborated below.

From a policy perspective, it is obvious that something needs to be done, and thus there has been a growing interest in research on mega-projects in the last decades. Following the results of earlier research, the emphasis has been on strategies for sobering optimism bias and countering strategic misrepresentation. The focus so far has been mainly on how instrumental-rational models such as cost-benefit analysis can be improved to make them less biased. Flyvbjerg (2009) has suggested a focus on improving calculations through various techniques such as reference class forecasting, i.e. a form of benchmarking where projects are required to be compared to similar projects already completed to check for unrealistic cost and benefit estimates. Priemus (2010) claims that decision-making processes need to be made more structured and made to follow a traditional project-management model with steps, check-points and decision points. This would reduce uncertainty and ambiguity and make decision makers take more informed decisions (Priemus, 2010).

Earlier research thus mainly takes its starting point from the finding that projects are made to look good on paper but turn out bad in reality. This, however, rests on a number of assumptions that can be questioned in the case of mega-projects. The first is that cost-benefit analysis is important for decision makers. Contrary to this, Annema (2013) along with other similar research (Sager & Ravlum, 2005; Mouter, 2016) has found that the use of instrumental-rational decision-making tools such as cost-benefit analysis to guide decisions is in fact quite limited. A second assumption is that cost-benefit analysis provides a fair evaluation of projects that stakeholders can agree on. As mentioned in the introduction, this is not self-evidently the case in large projects with long time horizons and several involved stakeholders with diverse interests. A third, and central, assumption is that the projects would not have gone through if it were not for the biased calculations. This does not explain why some mega-projects that look bad on paper still persist, as is the case in the Swedish high-speed rail project. All this suggests that the focus on calculative practices is misguided.

One way of categorising the dominant tradition within mega-project research is as part of an instrumental-rational tradition within decision-making theory. Decision making as a field is diverse, but it is relevant in this case as it is closely intertwined with justification. The theoretical framework on decision making used in this dissertation tries to move beyond instrumental-rationality by contrasting it with other influential theories on decision making. The framework is further elaborated in the next section, followed by an introduction to justification of decisions.

## 3.2 Decision making

Decision-making processes are normally thought of as choice processes (Brunsson, 2007). This means that they are by default considered to be about choosing an action among a number of alternatives. This perspective on decision making has led into what can be considered the mainstream of decision research. It is mainly preoccupied with studying how decision makers choose and how they should choose in order to fulfil their objectives (March, 1994). This perspective on decision making is introduced in the first section. Organisations also face a related problem in relation to decision-making processes, however, and this is to get things done (Brunsson, 2007). This perspective on decision making is introduced in the second section.

### 3.2.1 Finding out what to do

The most common conception of decision making is that it is about choosing what to do among a number of alternatives. This means that decision making is equated with choice. Decision making can in this view be described as problem solving, where the problem is constituted by the existence of more than one action alternative (Brunsson, 2007). This is the perspective on decision making that underlies normative decision theory. The task of the decision maker here is to choose one, preferably the best, alternative. In order to do this, normative decision theory advises a number of steps to be followed (March, 1994). The first is to determine the preferences. The second is to make a complete list of alternatives. The third is to evaluate the alternatives based on the preferences and thus arrive at the preferred alternative that is chosen.

In an ideal decision made by a perfectly rational decision maker, all relevant factors would be accessible and thoroughly understood at the time of the decision. The decision maker could then weigh these factors using established criteria to arrive at an optimal solution. Studies of decision making in the real world have, however, long acknowledged that actual decision-making processes are most of the time far from this ideal (Lindblom, 1959; March, 1994; Simon, [1945] 1997; Brunsson, 2007). Limitations in time, resources and cognitive abilities constrain the process (Simon, [1945] 1997; Kahneman & Tversky, 1979). Additionally, the world out there is complex and continually changing. In order to make a decision, a decision maker therefore needs to simplify this chaotic reality into something that is possible for a boundedly rational (Simon, [1945] 1997) individual to grasp (March, 1994).

One of the fundamental assumptions of this perspective is that decision processes are about producing clarity (Sahlin-Andersson, 1998; Stone, 2002). Clarity, based on collected relevant information, allows one alternative to stand out as the preferred choice. This could potentially be done in several different ways. One way is to make instrumental-rational reports and analyses. An analysis report, essentially, codes aspects of reality into numbers and words (March, 1994). In doing this, it simplifies reality into a form where it can be understood and acted upon.

The view that decision making is about finding and choosing among alternatives by producing clarity about their consequences is so familiar to us that it can be described as a taken-for-granted foundation for how most of us interpret decision processes (Brunsson, 2007). This is also the view of decision making that has become institutionalised through formal and informal rules and regulations (Jansson, 1992; Brunsson, 2007). For example, there is a requirement to make cost-benefit analyses to evaluate proposals in Swedish transport policy and there is an expectancy that the government can argue for investments in infrastructure that they propose in terms of costs and benefits (Thoesson, 2011).

### **3.2.2 Getting things done**

While decision making was assumed to be about choice in the first section, we will now turn to the related question of how decisions are turned into action. While this instrumental-rational decision theory is seen as a second step to be taken after the choice has been made, it is often the case in actual practice that the steps become mixed up (Hill & Hupe, 2002; Hupe, 2014). A common reason for this is that the decision process that we are looking at might perhaps not be about making a choice at all (Brunsson, 2007). Consider the situation where the decision process starts after the choice has been made. In this case, the process will be about legitimising an already made decision (Stone, 2002). Legitimation in this case is necessary in order to produce enough momentum for the chosen alternative to lead to action. Sahlin-Andersson (1998) has argued that this type of decision process is in fact the most common in actual practice.

In this type of decision process, a number of the assumptions presented in the last section are turned on their heads. One is that the search for alternatives becomes very different when the preferred outcome is already known. Instead of finding the best possible alternative, it becomes preferable to find

alternatives that make the chosen alternative come out on top (Stone, 2002). It might also be better to limit the search to a few alternatives rather than exploring them all. Too many alternatives risks complicating the process and might make it obvious that the choice leads to other things not being chosen (Stone, 2002; Brunsson, 2007). Too much information and analysis, in a similar way, might lead to paralysis or at least to delaying action. If action is what is desired, limiting information search and exploration of alternatives and “getting to a decision” becomes a priority. On the contrary, a classic trick among oppositional groups is to try to obstruct or delay actions by attempting to increase rationality in decision processes by arguing that more preferences, alternatives and consequences should be analysed and taken into account (Brunsson, 2007). The prioritisation of clarity is also questioned. If clarity produces a recommendation for a different outcome, perhaps ambiguity is preferable. Ambiguity can be used strategically in much the same way as clarity (Sahlin-Andersson, 1998; Stone, 2002).

In short, to do something requires commitment and resolve. This means the requirement for a different process than for finding out what to do. What is necessary is a process for mobilising support and justifying the action to the ones who are going to perform it. This leads us into the main topic of interest for this dissertation: how decisions are justified.

### 3.3 Justifying decisions

As concluded in the section above, an important part of decision making is to find a justification for why a certain way of addressing a problem is a good one. In a sense, it is even difficult to distinguish between the process of making a decision and the process of justifying a decision. As March (1994) points out, what is necessary for a decision to be taken is that the decision maker has made an interpretation of the situation at hand where a certain alternative to act becomes justified, or considered legitimate. Jansson (1992) presents two principal strategies for justifying a project. The first is to change the project in a way that will make it more attractive to the counterpart. The second is to change the counterpart’s image of the project in a more favourable direction. What is important is that the decision maker is provided with a justification for why a certain alternative to address a problem is a good one.

In this dissertation, two approaches for how this can be done are used to analyse the case. The first is the instrumental-rational approach and the second



is the narrative approach. The instrumental-rational approach is chosen since it holds a privileged position within policy analysis traditionally (March, 1994) and because it is strongly associated with transport policy decision making (Marsden & Reardon, 2017). The narrative approach is chosen as it has been proposed as a competitor to the instrumental-rational approach in policy-making that is likely to be particularly relevant in cases where facts are contested and difficult to establish, and where multiple stakeholders with different interpretations are involved (Roe, 1994; McBeth, et al., 2014), as is the case in mega-projects. Together the two approaches represent two key parts of policy: instrumental-rational analysis and argumentation through narrative, respectively.

### **3.3.1 The instrumental-rational approach**

Weber ([1922] 1983) argued in *Economy and Society* that the basis for authority in modern societies is rationality. This means that decisions need to be justified logically. It is not enough to justify a decision by appealing to tradition or authority. Instead, the decision is considered justified if it can be considered to be better or more rational than the alternatives in some sense. In order to justify a decision, it is necessary to argue convincingly for why it is rational.

The approach of classical rational decision theory is to follow a logical process. As a result of the dominance of this approach, the decision-making culture of the west has been described as one of marginalism (Krieger, 1986). The ideal is to be analytical and methodical, breaking issues down into their component parts and adding them up using a logical arithmetic. In its most idealised form, this understanding of the decision-making process is referred to as the instrumental-rational decision-making model. In this model, the decision maker has access to all relevant information, weighs pros and cons against a pre-defined set of goals, and chooses the objectively best alternative given the situation and preferences. This perspective on decision making requires that the decision maker understands the context and the full consequences of the alternative actions. Research in this tradition tends to emphasise the need for analysis and evidence, providing a basis for decision makers to weigh costs and benefits (March, 1994). As human beings are generally prone to making mistakes, having robust procedures and well elaborated technical models at our disposal could be argued as necessary to balance our unreliable human nature (Kahneman & Tversky, 1979; Simon, [1945] 1997). Understandably, the rationalistic paradigm has led to the development of several tools to assist

decision making that have been influential in transport planning in the last 50 years and that have formed what can be described as a technocratic paradigm (Thoesson, 2011). In rational decision-making theory, information is assumed to be used as a guide for making decisions. This is referred to in the literature as instrumental use (Mouter, 2016). An example of instrumental decision making in this case could be the use of the negative CBA results as a reason to stop or change the project.

In a situation where great trust is put in numbers, however, these will also be susceptible to manipulation in order to serve political purposes (Porter, 1995; Flyvbjerg, 1998). According to Wachs (1989), opportunistic manipulation of reports and analyses arises because we live in a time when it is necessary to support one's position with facts and numbers in order to be convincing (Ronnle, 2017b). Wachs (1989) points to the conflict that can arise when a project promoter needs evidence to support a decision, but that evidence is not available. In this situation, according to Wachs (1989), it is not uncommon for numbers to be adjusted slightly so that the analysis can support the claims made.

Danish planning researcher Bent Flyvbjerg is well-known for his work on the relationship between instrumental-rational analysis and decision making in the field of mega-project research. Inspired by Wachs (1989), Flyvbjerg et al. (2002) investigated how well cost-benefit analyses forecast project outcomes for 258 large infrastructure projects. What they found was that cost-estimates were highly and systematically misleading. Furthermore, they suggested that this is due to deliberate manipulation. If the projects that seem best in the analyses are the ones that are chosen, there is an incentive for planners to distort the analyses in order to get funding for their projects (Flyvbjerg & COWI, 2004). According to Flyvbjerg (1998), the reason that researchers looking for instrumental use often fail to do so is that, a lot of the time, the analyses primarily serve political rather than instrumental purposes (Ronnle, 2017b).

The tendency to trust in numbers also produces another possible complication in the use of instrumental-rational analysis. This is that the analyses are used to legitimate decisions even if they were not actually used. Feldman and March (1981) suggest that information is used by politicians who wish to look rational, whether they actually use the results or not (Ronnle, 2017b). Requesting and referring to research is a ritual that legitimates decisions in the eyes of the public and other stakeholders (Feldman & March, 1981). The high regard for economics makes it useful for organisations to hire economists and

produce econometric analyses simply because it is considered appropriate (Meyer & Rowan, 1977). Even if no one actually reads, understands, or believes them, these analyses can help legitimate an organisation's plans in the eyes of investors, customers, and internal participants (Meyer & Rowan, 1977; Porter, 1995; Sager & Ravlum, 2005).

In addition to being used instrumentally and symbolically, information can also be used opportunistically (Albaek, 1995). This refers to the tendency of politicians to cherry-pick parts of research that back up their argumentation while keeping silent on contradictory results (Mouter, 2016; Ronnle, 2017b). This is different from manipulation that involves deliberate bias of report results. This use of information is commonly associated with political debate, where information is used as political ammunition in order to argue for a preferred position (Weiss, 1977; Albaek, 1995).

What research tells us, then, is that despite the scientific air produced by the reliance on numbers (Porter, 1995), instrumental-rational models are prone to manipulation and even under relatively honest and controlled circumstances they are still bound to represent one version of reality at the expense of others (Porter, 1995; Thoresson, 2011). As information is used by decision makers to understand reality, the production of information is an important part of the policy process as it can potentially shape how reality is perceived (Ronnle, 2017b). While instrumental-rational models might be useful for guiding decisions, they also serve several other purposes in decision-making processes such as signalling competence, framing decisions, and providing political ammunition in debates.

### **3.3.2 The narrative approach**

The fact that instrumental-rational analysis is such a powerful tool in shaping how reality is perceived has led researchers to criticise the lack of political awareness and the presentation of results as in some sense objective (Porter, 1995; Thoresson, 2011). An alternative way to study decision making is to accept the political conflicts and view decision making as an argumentative process between competing frameworks rather than as a technical problem to be solved. In the research field of policy and planning, this approach has been referred to as the argumentative turn (Fischer & Forester, 1993). Instead of trying to close politics out, the argumentative turn states that public policy, constructed through language, is inevitably the product of argumentation (Fischer & Gottweis, 2012). Deborah Stone (2002) has described policy-

making as an ongoing discursive struggle over the definition and conceptual framing of problems, the public understanding of the issues, the shared meanings that justify policy responses and the criteria for evaluation. Instead of seeing language and argumentation as “purely rhetoric” (McCloskey, 2011), this view puts it at the centre of the policy process. As suggested by Edelman (1971), a policy debate is not just interplay between logics or arguments, but rather a competitive contest between competing frameworks for understanding the world.

The argumentative understanding of the policy process also puts the planner into a new light. Acknowledging that much of what planners actually do is far from the linear process, from defining a problem to implementing a plan, assumed in the idealised rational approach (Forester, 1989; Hill & Hupe, 2002), the planner is seen as an actor rather than as a neutral observer (Langmyhr, 2000; Tornberg, 2011). The argumentative turn emphasises that there is no such thing as a value-free social science that can produce tools for objectively measuring the effects of projects and ranking one above another. This requires a political process. Any model will have assumptions directing it in one direction or the other and these assumptions can definitely not be unequivocally determined (Stone, 2002).

In this new situation, instrumental-rational analysis is no longer the only way to justify a decision. The need for justification might instead be filled by a narrative, or a story (Krieger, 1986; Corvellec, 2007). A narrative is different from other forms of argumentation as it involves a story, highlighting actors, events and outcomes in a sequence that implies a moral of the story. The moral of the story is what intends to persuade through, for example, implying that a certain causal mechanism is involved that has relevance in the present situation. MacIntyre (1984) has written: “I can only answer the question ‘what am I to do’ if I can answer the prior question ‘of what story or stories do I find myself part’”. An alternative to justify a decision based on a calculation is to use a narrative to put the decision into a context where it is justified (McBeth, et al., 2014). A good narrative makes it possible to argue, despite a lack of clear factual evidence, how we have ended up in the situation where we are located, what we should do to address the situation, and why a particular proposal about what to do is a good one (Kaplan, 1986). While a rational-leaning observer might find this controversial, it is by no means new or extraordinary. According to some, narrative is even one of the principal ways for humans to understand the world (McBeth, et al., 2014), making them a key tool for political actors (Roe, 1994).

An important aspect of narratives as discussed in this dissertation is that they can be considered as consciously crafted stories made to argue for a position in a policy conflict (Ronnle, 2018a, forthcoming). Hajer (1995) uses the concept storyline to understand and explain the relationship between agency and discourse (Sturup & Low, 2015). Hajer interprets a storyline as “a generative sort of narrative that allows actors to draw upon various discursive categories to give meaning to specific physical or social phenomena” (Hajer, 1995, p. 56). As such, a narrative is different from more general concepts such as discourse through the introduction of agency (Sturup & Low, 2015).

The ability of a narrative to persuade depends not only on presentation and what is said explicitly but also on what is said between the lines and what other narratives that the particular narrative connects to (Ronnle, 2018a, forthcoming). This means that in order to analyse a narrative we need not only to describe the expressions themselves but also to study the underlying storylines (Hajer, 1995), that is, the implicit assumptions and ideas that permeate the message (Hilding-Rydevik, et al., 2011). An important function of storylines is that by uttering a specific element of one of them, one effectively evokes the storyline as a whole (Hajer, 1995). This frames the narrative by positioning actors, problems and solutions in a manner that makes intuitive sense to others. A narrative needs to be plausible within its context to be persuasive (Kaplan, 1986), and it is by uncovering the underlying storylines that we can understand why a certain narrative is successful (Hajer, 1995).

According to Stone (2002), narrative is one way to strategically define a problem so that one’s favoured course of action appears to be in the broad public interest. Particularly when facts are difficult to establish, such as when the future needs to be predicted, narratives are useful (Stone, 2002). For large projects that reach far into the future, strong narratives are often central in the argumentation (Roe, 1994). Stating that narratives are used in the absence of facts does, however, not imply that they are necessarily false. Narratives need to be plausible in order to be successful, and in many cases they represent one possible way to frame a problem. What is crucial, however, is that they might only represent one version among several possible (Kaplan, 1986). When facts are scarce, conflicting or both, a good narrative provides a possibility to provide order and integrate aspects that seem necessary for a decision to be made (Roe, 1994). This crucial task in the decision-making process (March, 1994) might, then, be performed by a narrative just as well as by a calculation or another decision-making model (Ronnle, 2018a, forthcoming).

Interestingly, narratives are not only important in the absence of facts, however. In some cases, narratives seem to be difficult to counter even when there are contradicting facts available. Roe (1994) describes this as a key practical insight of the study of narrative. Policy narratives often resist change or modification in the presence of contradicting empirical data, because they continue to underwrite and stabilize the assumptions for policy-making (Roe, 1994). The only way to beat a narrative, in this understanding, is to use a counter-narrative. Policy issues are often so complex, uncertain and polarised in the sense that their empirical, political, legal and bureaucratic merits are unknown, not agreed upon, or both, that the only thing left to analyse are the stories policymakers and their critics use to articulate and explain their reasoning (Roe, 1994).

# 4 Introducing the case

This chapter introduces the case and the empirical context of Swedish transport planning in general and the use of negotiations in planning in particular. The first section introduces the concepts using the Stockholm Negotiation from 2013 as the most elaborate example. The focus for the case study in this dissertation, the National Negotiation on Housing and Infrastructure (Sverigeförhandlingen), is introduced in the second section.

## 4.1 Negotiations in Swedish transport planning

The process for deciding what infrastructure to invest in is called transport planning. On the surface, transport planning appears to be a rather technocratic process where facts and analysis form the basis for decisions. While political factors are inevitably present, the ideal of rationalism has traditionally been strong. This ideal is, however, increasingly challenged.

Recent research has observed a trend in Swedish transport planning away from technocratic rationalism and towards a more pragmatic approach (Hultén, 2012). In general, there has in recent years been an increased willingness from the national government to relax central planning and invite other stakeholders to take part in shaping projects. A similar development has been observed across the public sector both in Sweden and internationally (Osborne, 2006; Montin & Hedlund, 2009).

The tendency to involve more stakeholders to reach common agreements in order to solve multi-faceted challenges has resulted in increasing complexity for governmental planning and decision making (Hill & Hupe, 2002; Montin & Hedlund, 2009; Osborne, 2006). Perhaps as a result of this increasingly complex environment, there is a growing sense among practitioners that the planning system is inefficient. Projects take too long to develop and projects that can potentially achieve large-scale change in a more sustainable direction are too difficult to get through. Instead, the grand plans are moderated step by

step until they finally end up as marginal changes to the existing system (Hrelja, 2011).

An attempt to address this situation was made in 2013 with the introduction of the so-called Stockholm Negotiation (Stockholmsförhandlingen). The main purpose of the project was to construct new underground lines to new growing suburbs of Stockholm. To get the most out of the project, it was considered important to connect the underground lines to new housing construction. In this way, the housing shortage in the region could be met while at the same time creating a new suburban city structure where the underground was the prioritised transport mode. The central government contributed by co-financing the infrastructure. In return, the local governments in the region committed to constructing a defined amount of housing in connection to the new stations. The negotiation managed to reach an agreement at the end of 2013 and was generally hailed as a success. The idea to use negotiations between different levels of government to handle the governance challenge and achieve large-scale change gained traction.

The idea to negotiate to find solutions to infrastructure problems was hailed as a new invention, but how novel it actually was can be questioned. In fact, there are several examples in the last decades of negotiation processes to find solutions to infrastructure issues in Sweden. In the 1990s, the Dennis package (named after the chief negotiator Bengt Dennis) was negotiated between the national government and the local governments in the Stockholm region (Isaksson, 2001) and similar negotiation processes occurred in Gothenburg. Even earlier, the search for alternative financing led to negotiations and eventually an agreement between local governments and representatives from industry for construction of a railway (Mälarbanan) around the lake Mälaren (Hultén, 2012). A common driver for these and other similar projects was to “get something done” and to bypass obstacles in the planning process, often related to financing (Hultén, 2012).

## 4.2 The National Negotiation on Housing and Infrastructure

In 2014, the government launched a new negotiation on a national scale. This time the scale and scope was much larger than in the Stockholm negotiation. The National Negotiation on Housing and Infrastructure



(Sverigeförhandlingen) was set up to negotiate a plan for construction of a high-speed railway between the three largest cities, related infrastructure and public transport investments, and at least 100,000 new homes (Government Offices of Sweden, 2014b). The negotiation was described as a policy-instrument (Salamon, 2002; Hultén, 2012) for getting the project through the planning system faster than would have been possible using a traditional approach and for raising co-financing. At the same time, the project aimed to take a wider perspective on societal development and to make sure the railway was constructed in such a way that benefits for society as a whole were maximised. The focus on housing was a clear manifestation of the will to plan for societal development and not merely infrastructure. The new model was argued to handle the new governance structure and to get things done both faster and more effectively than the traditional approach.

The high-speed railway and the surrounding investments were first presented by the centre-right government in the summer of 2014 under the label the Sweden Construction (Sverigebygget) (Government Offices of Sweden, 2014a). Drawing on the positive experiences from the Stockholm Negotiation, the government decided that this project should also be structured as a negotiation between the central government and the affected local governments. There was an outspoken ambition to use the negotiation to raise co-financing in order to make the project viable (Government Offices of Sweden, 2014a). Another ambition was to bypass conflicts that might occur later in the planning process by involving the local governments from the start (Reinfeldt, 2016). It was also suggested that involving the local governments financially might have a dampening effect on cost increases as there would be an incentive for the local governments to avoid costly local solutions.

Two negotiators, previously politicians, were appointed to lead the project. These were the same pair that had headed the Stockholm Negotiation and they also brought several of their members of staff with them into the new organisation (Isaksson, 2018). The negotiation was formally set up as a government-appointed committee or commission of inquiry (Government Offices of Sweden, 2014b). When the government appoints a committee it also provides a set of guidelines for its work. These are known as terms of reference, or committee directives, and they set out what issue the committee is to examine, what problems there are that need to be solved, and by what date the inquiry should be completed (Sveriges Riksdag, 2018). In this case, the task was to produce a plan for how to proceed with the project based on agreements

with the local governments. This plan would then be passed on to the government for later approval through the political system.

The negotiation process was divided into two phases: a fact-finding phase and a negotiation phase (Isaksson, 2018). The fact-finding phase was initiated in June 2015 and lasted until the end of 2016. The idea was to produce a foundation of facts on which to base the negotiation on financing and route planning. The fact-finding phase involved making analyses of alternative routes and commercial interest in running the trains, predicted number of travellers and so on. It also involved the production of benefit analysis reports that the local governments were asked to submit to the committee. These reports were intended to appraise the benefits of the proposed investments on the local level and thereby form a basis for the negotiations on co-financing (Sverigeförhandlingen, 2015). They were also aimed to provide a complement to conventional CBA in prioritising between alternatives (Sverigeförhandlingen, 2016). Instead of giving out firm guidelines or following conventional CBA-methodology, the local governments were explicitly invited to be creative and develop new methodologies for calculating the benefits (Sverigeförhandlingen, 2015). The instructions asked for the reports to include only consequences and they were asked to describe outcomes from the investment without specifying alternatives for comparison. The instructions asked for monetisation of benefits in six areas: housing, travel time, labour market, environmental, business, and social. For two of the areas, housing and labour market, quantification of the number of new homes and new jobs respectively were also requested (Ronnle, 2017a). The reports were submitted to the committee in October 2015.

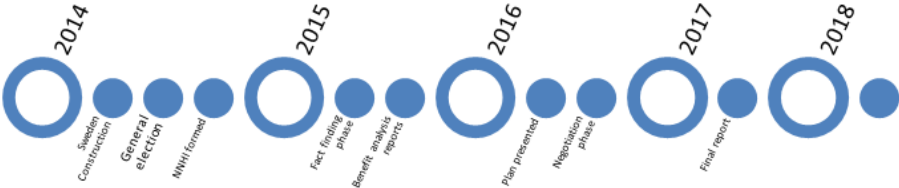
The negotiators also used the time during the fact-finding phase to travel around the country and meet with representatives for local governments that were interested to take part in the negotiation (Isaksson, 2018). They also took part in more than ten conferences in Sweden in order to inform audiences about their work as well as giving a large number of interviews in the media. The committee also worked actively in social media and through press releases to raise interest about their work (Isaksson, 2018).

After the benefit analyses had been submitted, the project leadership committee made a route plan and a first proposal for where stations would be located. The identified cities and towns were then invited to take part in the negotiation about more precise specifications and co-financing in terms of commitments for constructing housing and financial commitments. The commitment to constructing housing meant that the local governments were

supposed to make sure, through the planning monopoly and through facilitating necessary investments in roads, sewage and so on, that a specified number of new homes could be constructed within a specified time frame. The actual houses would, however, be built by private developers. Increasing housing construction was a clear political ambition founded on a much debated housing shortage, particularly in the larger cities (Government Offices of Sweden, 2014a).

The negotiation phase was initiated at a well-directed event at the Oscar Theatre (Oscarsteatern) in central Stockholm on 1 February 2016. Before the event, the local governments that had submitted benefit analysis reports were still kept in the dark about the planned proposal. This meant that the event attracted considerable interest and several hundred local government politicians and civil servants were present (Isaksson, 2018). On stage, the negotiators announced the proposed plan and the station locations that the negotiation would start from. A week later, a similar event was held to announce the proposed public transport investments. The same day as the presentation was held the first bids were sent out to the chosen local governments and the negotiation phase began.

The result of the negotiation process is a route plan for where the high-speed railway should go, a proposal for where stations should be located and agreements with 11 municipalities and five regions on co-financing of 1,241.5 million SEK and a commitment to constructing 92,270 new homes (SOU, 2017:107). In addition to this, the plan includes public transport investments for an additional investment cost of 38.4 billion SEK, which in turn are connected to commitments for 193,130 new homes in the chosen cities. In December 2017, the final report was delivered to the government and the committee was dismantled. Figure 1 presents a timeline for the process.



**Figure 1** Timeline for the National Negotiation on Housing and Infrastructure (NNHI)



# 5 Summary of the papers

This section presents the findings of the papers written for this dissertation project. The main findings of the papers are presented one by one. The results are returned to in the discussion in the next chapter.

## 5.1 Paper 1: A novel approach to economic evaluation of infrastructure?

Economic evaluation plays an important role in transport planning. The standard method for economic evaluation of transport infrastructure in Sweden is the cost-benefit analysis (CBA) (Eliasson & Lundberg, 2012). The Swedish high-speed rail project has a clearly stated objective to maximise societal benefit (Government Offices of Sweden, 2014b). However, the CBAs performed have all deemed the investment to be unprofitable with net present values between -57 and -74 billion SEK (€-6 to €-8 billion) (Trafikverket, 2015). The construction costs (currently at between 190-320 billion SEK (€20-34 billion)) exclude costs for stations, indicating that cost estimates are at the low end. Meanwhile, the government has indicated that the societal benefits need to be seen beyond what is captured in traditional CBA. According to the minister for infrastructure there are additional effects, like labour market effects, that are not included in conventional CBA (SvD, 2015). The negative CBA results led to heavy criticism from economists (Börjesson, et al., 2016) and the debate around the project has circled a great deal around the issue of societal benefit, its definition, and to what extent the project produces enough of it to justify the costs.

At the start of the process, the national government asked the local governments to hand in benefit analysis reports outlining the benefits that they expect to receive from investment in their respective influence areas. These reports were intended to appraise the benefits of the proposed investments on the local level and thereby form a basis for the negotiations on co-financing

(Sverigeförhandlingen, 2015). They were also aimed to provide a complement to conventional CBA in prioritising between alternatives (Sverigeförhandlingen, 2016).

As the first paper in this dissertation finds, these benefit reports are full of methodological inconsistencies (Ronnle, 2017a):

“To start with, there is a considerable overlap between the reported benefits. To take one example, let us consider the relationship between travel time and housing benefits and benefits for business respectively. The main actual difference that a new infrastructure connection provides is increased accessibility expressed as a decrease in travel cost (time and resources) (Eliasson, 2016). The decrease in travel cost can in turn be reflected in an increase in willingness-to-pay for houses and offices whose location are improved by the connection. Therefore, increases in property value (commercial and housing) are just another way of expressing decreases in travel time. As such, these benefits are double-counted. The problem of double counting exists not only in the reports, but already in the instructions. In the case of labour market benefits, there is support in research that some of the value from increased accessibility is not captured in the Swedish models. The major part, however, is (Eliasson, 2016). Meanwhile, the instructions ask for a quantification of all labour market benefits. In the case of social benefits, they seem mostly to be considered as a way of expressing reductions in unemployment rates in areas where accessibility is improved. These are, however, already accounted for as labour market benefits and travel time benefits, i.e. triple-counted. Frankly, from a strictly instrumental-rational perspective the benefit analysis reports don’t make sense.”

The paper finds that it is necessary to widen the focus in order to understand what is going on. It is not enough to consider the benefit analyses to be part of a simple fact-finding phase, as it was officially described. Instead, the negotiation element of the process has started already in the reports (Ronnle, 2017a):

“To understand what is going on, we need to consider the impact of the second part of the NNHI-process: the negotiation phase. The intention to produce benefit analysis reports as part of a fact phase preceding a negotiation seems to have been difficult to fulfil in practice. The contributors have been aware that the reports will be used as a basis for negotiation and this has clearly influenced how they have structured their reports. They have formed constellations, formally and informally, to strengthen their arguments. In terms of content, they have by and large used the opportunity to argue their case, rather than provide a balanced account of benefits. Instead of following instructions, they have used different strategies to shape the analyses their own way.

A second important factor concerns the role of the benefit analysis reports in justifying the project to decision makers further up the hierarchy. It is evident that the introduction of the benefit analyses makes the framework for analysis less rigid than what would have been the case with only conventional CBA. The decision basis becomes less likely to provide definitive answers on what project to prioritise and on what grounds. By picking and choosing criteria for evaluation several different alternatives can be justified. Additionally, as the project is deemed unprofitable in conventional CBA, the benefit analysis reports can serve as a counterweight showing pretended additional benefits. All this increases the space for political manoeuvring in the decision-making process.”

## 5.2 Paper 2: Planners’ analysis and opportunism

The second paper in this dissertation focuses on the production and use of the benefit analysis reports (Ronnle, 2017b):

“The benefit analysis reports were presented as a tool for improving the decision basis. This includes two of the four stated purposes: to provide a guide for where to locate stations and to determine co-financing. However, the interviews conducted for the second paper revealed two additional purposes: to demonstrate to the local governments that there are large potential benefits in the project for them if they become involved, and to persuade the political decision makers that the project will deliver benefits. The first can be regarded as a way to involve the local governments in the project, the second as a way to justify it externally to decision makers further up the hierarchy. These are clearly different from the two first purposes, which were intended to facilitate decision making.”

Judging by the findings of the second paper, it is difficult to determine even a small contribution to instrumental decision making, however (Ronnle, 2017b):

“The project leadership committee interviewees claim that the benefit analysis reports were considered as one factor among others when deciding where to locate stations. This is, however, disputed by the local government interviewees. One interviewee from a local government that failed to get a station tried to follow how the decisions were made but failed. The project leadership committee has not provided a detailed explanation but instead referred to the general criteria. The same goes for how the reports have been used in the negotiation on co-financing. The project leadership committee interviewees claimed that the reports have been used as a basis for bids but did not specify how. The local government interviewees were generally sceptical.

Three interviewees failed to find a consistent logic in the calculations, and two openly talk about the negotiation as a pure bargaining game, or a free fight without rules of the game. As far as the housing numbers are concerned, all local government interviewees openly admitted that the homes they had committed to constructing were difficult to connect directly to the high-speed railway.”

Instead of being used to guide the decision, it seems that the reports have largely been disregarded in the instrumental sense. The project leadership committee has perhaps realised that the reports are insufficient to base decisions on. As mentioned earlier, there are methodological inconsistencies, and the high estimates for housing construction seem to include houses that would have been built anyway. Another aspect stands out more clearly, however (Ronnlé, 2017b):

“Traditional CBA calculations are negative to the project. Still, the government argues that there are additional reasons to pursue the plan that go outside the scope of the CBA, particularly societal development through housing construction. Evidently, this is seen as a valid reason to disregard the CBA result. The benefit analysis reports here fulfil two important roles. First, they provide a set of alternative benefits, primarily the housing benefits, which are used to counter claims that the project benefits are too small to justify the costs. Second, the assignment itself provides political momentum for the project by engaging local governments hands-on in the project. Once local planners and politicians are envisioning how their towns and regions will prosper with the arrival of the high-speed railway, they will likely be ambassadors and guardians of the project. Especially as their co-financing is limited compared to their gains, they will all probably consider that they have a lot to lose if the project is cancelled.”

### 5.3 Paper 3: Justifying a mega-project despite the numbers

As concluded by the first two papers, the numbers are pitted strongly against the project. The cost-benefit analysis is negative and the alternative benefit analyses are insufficient to rely on. Frankly, from an instrumental-rational decision-making perspective the project should already have been cancelled. However, the planning process has continued under two different governments (centre-right and centre-left respectively) and the current government is still insistent that the high-speed railway will be constructed. This raises the



question how the project is justified. As discussed in the theoretical framework earlier, a decision maker needs to construct a simplification of reality in which a certain decision becomes justified in order to make a decision possible (March, 1994). MacIntyre (1984) claimed that I can only answer the question “what am I to do?” if I can answer the prior question “of what story or stories do I find myself part?” The third paper in this dissertation (Ronnle, 2018b, forthcoming) contends that the Swedish high-speed rail project is justified using a narrative:

“The first part of the narrative is about high-speed rail as a solution to stagnant economic growth. Earlier research on infrastructure policy has often discussed the connection to economic growth, which tends to be difficult to establish (Vickerman, 2017). While studies do generally find a correlation between infrastructure assets and growth, it is difficult to find out which way the causality goes, whether there is an optimal level where increased investment in infrastructure fails to deliver benefits to outweigh additional costs (which is plausible), and more generally even take investment costs and alternative costs into account at all (Banister & Berechman, 2001). In this particular case, the economic evidence is quite clearly against the project. Interestingly enough, it seems that the narrative on growth present here, while often seen as closely related to economism, includes taken-for-granted assumptions about growth, infrastructure and urban development that persist even in cases where economic analysis clearly contradicts them.

The components of the narrative can be traced back to Adam Smith and the origin of the economics discipline. In the *Wealth of Nations*, Smith lays out four principles for economic development with relevance to this discussion (Smith, [1776] 1994). Firstly, that wealth development requires economic growth. Secondly, that economic growth requires division of labour. Thirdly, that division of labour requires widening markets. And fourthly, that widening markets require improved transport capacity. Smith further suggests that economic growth should be maximised. According to him, continuous rapid economic growth is necessary to provide decent living conditions for all and not just the social elite. With ever widening unregulated markets, economic growth will continue to lift the poor out of poverty and improve living conditions across the board (Smith, [1776] 1994).

The narrative presented in this case shows clear similarities with Adam Smith’s argument. It is also closely related to the concept of mobility. Ever increasing mobility is seen as a cornerstone of modernity and as a prerequisite for development, both societal and economic (Hannam, et al., 2006). The storyline we are given about the future is the story of hypermobility, where the southern part of the country is connected into one labour market region where people can

live, work and study wherever they like without having to make trade-offs based on distance. This in turn widens markets and gives rise to economic development.”

The narrative has two more versions, the environmental and the social, where progress is equally emphasised:

“The environmental version of the narrative stresses the possibility to combine economic growth and environmental sustainability through the high-speed railway. The high-speed railway is presented as a way out of the difficult trade-off between economic growth and environmental degradation. The idea that environmental problems can be solved without compromising economic growth is sometimes referred to as eco-modernisation (Hajer, 1995; Mol & Spaargaren, 2000). This compromise emphasises consensus and holds that common solutions can be found to satisfy all stakeholders. While researchers have often been critical towards the tendency of the approach to gloss over inherent conflicts (Givoni & Banister, 2013), it has been successful in the political arena. A reason for the appeal of eco-modernisation in this case is that it enables the formation of an unorthodox coalition between greens and growth-proponents. These groups are often opposed on policy, but the eco-modernisation narrative in the high-speed rail project provides a common ground as it supplies something for both groups. The coalition makes it possible to dismantle criticism from both angles and is therefore important to make the project politically successful.

Finally, the high-speed railway is claimed to alleviate social problems such as housing shortage, unemployment and regional differences in social capital. Essentially, the narrative boils down to a belief in economic development as a vehicle for solving other problems, much like Adam Smith suggested. Economic development caused by the infrastructure investment, with some help from the negotiation process to remove obstacles and make things happen, will increase housing construction and reduce unemployment. We are also told that infrastructure could level geographic differences in social conditions by linking people closer together. However, this is contradicted by another story, where the growth of the capital Stockholm is necessary for the well-being of the country as a whole. Research seems to support the latter version. While transport poverty is indeed described as an obstacle for social sustainability in some places in the world (Lucas, 2012), it is questionable if this holds in Swedish cities that are comparably small and already have well-developed public transport systems. Additionally, earlier research has found that social effects from infrastructure investment are often difficult to demonstrate (Schwanen, et al., 2015) and that regional differences are reinforced rather than alleviated by high-speed rail (Albalade & Bel, 2012).”

Together, a narrative of progress is formed that is particularly well suited to argue for a project of this magnitude and to argue against an allegedly too narrow cost-benefit analysis:

“Looking at the three narrative storylines put together, they form an underlying storyline that can be described as a narrative of progress. Progress is defined as continuous economic development and the high-speed railway is seen as the hero of the story. In fact, the story is a version of the “stymied progress story” (Stone, 2002). It describes that while improved infrastructure has in the past helped bring the country from ruin into economic well-being, this is now threatened by a lack of investment in the next generation of infrastructure. If nothing is done, things will get worse. The narrative of progress alludes to what has been described as our most sacred myth in Western civilization: the myth of progress (von Wright, 1992). By evoking strong connections to this myth the story gains credibility. Assuming that progress is at the same time necessary, inevitable and requires action on our behalf, and following Adam Smith in positing that economic development is both closely dependent on infrastructure and a prerequisite for solving social and environmental problems, the narrative becomes suitable for promoting the high-speed railway. Putting the high-speed railway at the heart of this important cultural storyline is the main narrative figure used to justify the project. By arguing that the project provides the causal mechanism required to bring us from our present state to the desired future state; the narrative evokes a number of important connotations and associations that make intuitive sense. If decision making is about putting a decision into a context where it is justified as argued by McBeth et al. (2014), the narrative in this case does so, at least if trust in the narrative of progress is allowed to take precedence over trust in economic modelling.”

## 5.4 Paper 4: What frames perceptions on mega-projects?

While it is interesting how the narrative is structured and likely that this has affected its chances of survival, what is even more interesting is to what extent the claims made in the narrative have been accepted by stakeholders in the project. This is particularly interesting in this case as the narrative clearly contradicts the results of the cost-benefit analysis on several points. The fourth paper in this dissertation (Ronnle, 2018b, forthcoming) investigates the extent to which the public sector stakeholders’ perceptions of the Swedish high-speed rail project are based on policy narratives and cost-benefit analysis respectively.

In order to do this, the narrative presented above is contrasted with the cost-benefit analysis (Comprehensive Assessment of Effects (Samlad effektbedömning) (Trafikverket, 2016)). The CBA makes contradictory statements for the economic, environmental and social impacts, and comes to the conclusion that the project is unprofitable (Ronnle, 2018b, forthcoming):

“The version of CBA employed in the Swedish transport sector, the Comprehensive Assessment of Effects (samlad effektbedömning), consists of a traditional cost-benefit analysis complemented by a qualitative assessment of distributional impacts and non-monetized effects. The assessment is presented as being based on a “proven and by the Transport Administration agreed calculation methodology”. The high-speed railway is described as heavily unprofitable with a benefit-cost ratio of 0.6, meaning that the project is deemed to produce only 60 Swedish cents of value for each Swedish krona spent. The assessment thus acknowledges that there are positive effects, but finds that these are too small to motivate the cost.

The environmental impact is calculated to be positive in terms of carbon footprint as travellers are moved from modes dependent on fossil fuel to rail. However, the construction of the railway will lead to large emissions that reduce the positive effect and the break-even point of emissions will occur far into the future. To this are added the negative environmental effects on landscape, biodiversity, plant life and animal life caused by the construction of the railway, barrier effects and by noise during operation.

In terms of social aspects, the assessment makes a qualitative analysis of distributional effects. This concludes that the capital Stockholm will receive a proportionally higher share of the benefits than the rest of the country while the negative effects such as new barriers in the landscape and noise are distributed evenly along the railways. It also adds, however, that social benefits are marginally increased from improved traffic safety and that accessibility for groups in society without access to cars is improved.”

The study is based on a survey sent out to 159 decision makers in the Swedish high-speed rail project on local, regional and national government level. The conclusion of the study is that (Ronnle, 2018b, forthcoming):

“The findings support the view that policy narratives are central to policy processes. It is clear that the respondents overall tend to agree rather than disagree to all statements representing the policy narrative and that the opposite is true for the statements representing the CBA. This suggests that a policy narrative might be just as efficient as CBA in shaping perceptions. Furthermore, the findings indicate that both CBA results and policy narratives are used

opportunistically as tools to back up perceptions based on personal or organizational gain. This is perhaps especially pronounced for large and far-reaching policy proposals such as mega-projects. This suggests that future research on mega-project management should focus less on de-biasing CBA and more on uncovering how projects are framed and how stakeholders are convinced to commit to promoting them.”



# 6 Discussion

The over-arching purpose of this dissertation is to analyse how mega-projects are justified. The discussion is divided into three sections. The first section argues for the interpretation in this case study: that the case is one of justification. The second section analyses how mega-projects are justified, based on the findings of the papers. The third section widens the discussion and takes a broader perspective on what the findings mean for research on mega-projects. The fourth section discusses the implications of the findings for Swedish transport policy.

## 6.1 A case of justification

A central question in any case study is what is this a case of? In this dissertation, the National Negotiation on Housing and Infrastructure is interpreted as a case of how mega-projects are justified. This interpretation is justified in this section.

The National Negotiation on Housing and Infrastructure was presented as a solution to several problems. It was intended to produce a plan for a high-speed railway and other infrastructure that maximised social benefit. Furthermore, it was intended to provide co-financing, increase housing construction, and ensure rapid implementation of the plans.

The result of the negotiation process is a route plan for where the high-speed railway should go, a proposal for where stations should be located, and agreements with 11 municipalities and five regions on co-financing of 1,241.5 million SEK and a commitment to constructing 92,270 new homes (SOU, 2017:107). In addition to this, the plan includes public transport investments for an additional investment cost of 38.4 billion SEK, which in turn are connected to commitments for 193,130 new homes in the chosen cities. The rhetoric has been ambitious about the negotiation's ability to find new solutions, to connect infrastructure and housing development and to provide

innovative financing solutions based on benefits (Isaksson, 2018). How successful the process has actually been can, however, be questioned.

One major claim is that the negotiation has affected the planning of the railway. Initially there were a number of cities involved in trying to affect the route and the location of stations. Looking at the proposed plan at the end of the process, however, it seems that this had little impact. The final proposal was, according to the committee itself, made based on a consideration of cost, cost benefit analysis results, predicted travel time and travellers, travel system considerations and so on. These parameters are all outside of the actual negotiation. One parameter was included with relevance for the negotiation, namely the negotiated number of new housing. However, this can be disputed on two grounds. First, it is difficult to see exactly what the impact of this figure is. One municipality that failed to get a station compared their numbers with the competing municipality that got a station and found that they should have won if the criteria were used with equal weight put on all aspects. Particularly the potential for housing was much larger in their proposal. Regardless of this, however, it is clear that the chosen route fulfils the other planning objectives and the housing issue was not decisive. The second ground for disputing the relevance of the housing element of the negotiation is that the municipalities seem to have inflated the numbers quite significantly. Interviews made for this dissertation suggest that the municipalities included housing that they would have built anyway and that the project leadership committee acquiesced to this. In terms of new financing solutions, results are meagre. The total amount of co-financing in the final agreements between the local governments and the project leadership committee of 1,241 million SEK corresponds to only 0.5 percent of the total predicted investment cost (230 billion SEK). As such, very little came out of the talk about negotiation as a policy-instrument for raising substantial co-financing.

In one aspect, however, the negotiation seems to have succeeded. It has created an enormous interest for the project, and it has managed to create support for it, particularly among local government representatives. In the survey conducted for the fourth paper of this dissertation, 39 out of 53 respondents in the municipalities taking part in the National Negotiation on Housing and Infrastructure are positive or very positive to the project and only eight are negative. Among the respondents were both municipalities that have been chosen to receive stations and municipalities that have not. This is striking considering the high costs and the negative cost-benefit analysis results. The support for the project along the proposed routes is even stronger, which is



evident in the public debate. Local and regional governments in Skåne in the south of Sweden have arranged two conferences in the last few years with the name Byggstart (Construction start) and a clear pro-project agenda. Local politicians have written articles in several professional and public newspapers. As such, the project has been successful in raising support despite the numbers, and it therefore provides a good opportunity to analyse how mega-projects are justified.

## 6.2 Justifying a mega-project

The over-arching purpose of this dissertation is to analyse how mega-projects are justified. This section directly addresses this purpose. The analysis is based on four strategies identified in the papers that can all be interpreted as efforts to justify the project.

The first strategy was to change the project, or more precisely what was defined as the project. The high-speed railway itself is what has received the most criticism in the public debate. It is unprofitable in cost-benefit analysis, it is expensive, it has contested effects and it will result in large-scale environmental impact. On its own merits, the project is difficult to argue for. To address this, the project was expanded and connected to other topical societal issues. One was the connection to the debated housing shortage in the country. Another was the connection to local transport investments and sustainable cities, particularly public transport. Connecting the high-speed railway to other issues enabled the project leadership committee to argue that the investment had to be seen in a wider context of societal development and that it isn't enough to consider the high-speed railway on its own, as the cost-benefit analysis does.

The second strategy was to produce alternative analyses that showed a more positive result than the cost-benefit analysis did. After the project boundaries were expanded, alternative analyses were made on the new wider definition of the project. The motive for producing analysis reports is in principle two-fold (Jansson, 1992), and was so in this case. The first is the cognitive motive: to make analysis to change your own understanding of the project. One purpose of the reports was evidently to contribute to decision making on stations and co-financing, as the traditional models were considered inadequate for this purpose. The second motive is the communicative motive: to change the image of the project for outside observers. This was also evidently the case for the

benefit analyses. A central ability of numbers is to back up a story. A saying, sometimes attributed to Mark Twain, states that “figures don’t lie, but liars figure”. Without accusing anyone of lying in this particular case, the saying highlights an important feature of numbers. Particularly in a situation characterised by instrumental rationality, it is necessary to come up with numbers to support your proposal (Porter, 1995). According to Wachs (1989), this provides an opportunity for opportunistic manipulation of reports and analyses. Wachs (1989) points to the conflict that can arise when a project promoter needs evidence to support a decision, but that evidence is not available. In this situation, according to Wachs (1989), it is not uncommon for numbers to be adjusted slightly so that the analysis can support the claims made, similarly to what Bent Flyvbjerg refers to as strategic misrepresentation (Flyvbjerg, et al., 2002; Flyvbjerg, 2009). In the case of the National Negotiation on Housing and Infrastructure, this is a fitting description. It is considered necessary to produce analysis reports to back up the project in order to fulfil what is expected and considered appropriate for an organisation planning infrastructure. There is evidence both of how definitions were changed to improve the results of the reports and of how results were used opportunistically by the project leadership committee in arguing for the project.

The third strategy was to create and mobilise stakeholders in order to increase political momentum. The benefit analysis reports were important not only because they produced numbers to back up the story, but also because they mobilised the local governments. The reports were not produced centrally by government experts; instead, the production of the reports was organised as a part of the negotiation game. The local governments were asked to produce the reports and submit them in to the project leadership committee and thereby express their interest in taking part in the negotiation about stations and investments. The assignment itself provided political momentum for the project by engaging local governments hands-on. Once local planners and politicians were envisioning how their towns and regions would prosper with the arrival of the high-speed railway, they became ambassadors and guardians of the project. They probably all considered that they had a lot to lose if the project was cancelled, especially as their co-financing was limited compared to their gains (Ronnle, 2017b). In a sense therefore, the focus on involving the local governments created and mobilised stakeholders with an interest to make the project happen.

The fourth strategy was the use of the policy narrative. As discussed in the theoretical framework earlier, a decision maker needs to construct a simplification of reality in which a certain decision becomes justified in order to make a decision possible (March, 1994). One way to look at this problem is that the decision maker needs to construct a narrative where the decision becomes appropriate. As argued in the third paper, a narrative of progress connected to high-speed rail was important in achieving this in the National Negotiation on Housing and Infrastructure (Ronnle, 2018a, forthcoming). The fourth paper in this dissertation finds that decision makers involved with the project are significantly more likely to agree to statements emanating from the policy narrative, while they are significantly more likely to disagree to statements emanating from the cost-benefit analysis (Ronnle, 2018b, forthcoming). There is a difference between respondents representing the national and the local government level, perhaps attributable to political interest and opportunistic use of information. Still, the findings suggest that the policy narrative is an important factor in the policy process and that it has considerable support among stakeholders of the project.

A common denominator for the strategies is that they contribute to getting things done while they add considerable confusion in terms of finding out what to do. They do this by increasing ambiguity and reducing clarity. A consequence of the wider definition of the project was that it became more ambiguous in terms of boundaries and what was included and what not. This, in combination with the production of the alternative benefit analyses, produced considerable confusion about the consequences of the project. The policy narrative, meanwhile, puts the project into a historical context of progress that makes it rise above petty cost calculations. A central tenet of rational decision-making theory is to clarify ambiguity and reduce complexity (Sahlin-Andersson, 1998) (Stone, 2002). This is assumed to be necessary for getting projects approved. In this case, however, it appears to be the opposite. Instead of being a problem to be reduced, ambiguity is used strategically. Vaguely presented ends and assumptions are not problematic but a possibility, according to the ambiguity model. Stressing the extraordinary, the unique, and therefore the unclear and ambiguous, attracts support and diverts criticism (Sahlin-Andersson, 1998). In this case, making the project definition wider and stressing the connections between high-speed rail, public transport, housing, labour market development and even social sustainability produces considerable ambiguity in terms of consequences and provides an opportunity for different stakeholders to read their favoured development into the project. As described in paper 3, for example, the narrative allows both growth

proponents and greens to see the project as furthering their interests while glossing over inherent conflicts.

An aspect of the strategies not dealt with so much above is the extent to which they are interpreted as consciously developed and followed by the project leadership committee. As discussed in the chapter on methodological approach, an underlying assumption in this dissertation is that the actors have acted rationally, at least in some dimension. This does not necessarily mean, however, that it has been an open and articulated process of developing and following these strategies. An equally possible, and perhaps more likely, explanation is that the strategies are common tools in the political toolbox that the members of the project leadership committee, judging by their background, should be well acquainted with. Therefore, when their project is challenged, working along these strategies might be the result of a taken-for-granted way of dealing with criticism and justifying projects.

Whether the project will actually be approved and the railway constructed is not yet certain. Earlier research on large projects in fact suggests that it is difficult to pinpoint exactly when such a decision is or was made, even after a project is finalised. Instead, a continuous process of activities and choices lead up to the final result. Norberg (2016) argues that the process leading up to the construction of the new Stockholm Bypass motorway developed in this way. What in fact happened was that the idea of a motorway along this particular route eventually became institutionalised. That is, the idea that the motorway was to be built was eventually taken for granted to the extent that it became a necessity. The National Negotiation on Housing and Infrastructure might well in hindsight be seen as one such defining process in the institutionalisation of the high-speed railway. The process has contributed to this in two major ways. Firstly, it has built support along the railway and made planners include the idea that the high-speed railway will eventually be built into their taken-for-granted expectations of the future. Secondly, it has connected the project to a narrative of how Swedish transport planning can achieve its objectives. If these objectives do not change due to technological or political shifts it is possible that the project will continue to pop up and eventually be constructed. Whether it is done now or in the future is, however, difficult to predict and will likely depend on more immediate political events.

An additional reflection is that the strategies employed in this case are likely to be more efficient in an early stage of project development than later on. In the first phase of a project, dreams and visions are effective in attracting support and diverting criticism. However, the closer a project comes to

realisation, the more hands-on the process becomes and the more concrete the plans need to be. This means that at some point along the way, the dreams need to meet reality in order to materialise into a project. One important step in this regard is when the budget is set and financing needs to be guaranteed. The scepticism towards the project in relation to costs among parliamentarians observed in paper 4 speaks to this interpretation. A possible development for the project is therefore that it survives as long as it is allowed to stay in the dream phase, but that the bubble bursts when it hits reality. Bearing in mind the institutionalisation process just described, however, a second development is possible. If the project proponents manage to keep the project in the dream phase for long enough to make the project institutionalised, there is a possibility that it has reached the stage of inevitability before the bubble is burst. The National Negotiation on Housing and Infrastructure could therefore be interpreted as an attempt to keep the project from becoming too concrete while still pushing it forward far enough to increase the chances of eventual success.

### 6.3 Implications for mega-project research

Experience from mega-project research shows that mega-projects are often oversold. Costs are underestimated, benefits over-estimated, and time schedules rarely kept (Cantarelli & Flyvbjerg, 2013; Flyvbjerg, 2014). The reasons for this are two-fold. One is optimism bias and the planning fallacy (Kahneman & Tversky, 1979; Buehler, et al., 1994) that make us consistently and repeatedly under-estimate the time and effort required to complete a project due to an ill-founded tendency to assume that things will work according to plan. The second is strategic misrepresentation, meaning that projects are consciously oversold by planners wishing to have their projects approved (Flyvbjerg, et al., 2002). This problem is amplified by the institutional set-up where projects are competing for funding. If projects are ranked based on their predicted effects there is a risk that the most oversold projects are the ones eventually approved. The principle of project selection becomes survival of the un-fittest (Flyvbjerg, 2009).

According to earlier research, this has mainly been seen as a case of calculation bias. The findings in this dissertation suggest that the problem goes beyond calculation practices. The project in this case comes out clearly as unprofitable in the cost-benefit analysis results and its continued support can thus not be

attributed to a calculation bias. Rather it seems as though a policy narrative, clearly more optimistic about the project than the cost-benefit analysis, has taken over. While there is clear evidence of strategic misrepresentation in the alternative benefit analyses, the policy narrative provides an additional kind of misrepresentation: narrative misrepresentation. All in all, it is clear that justification of mega-projects, like the justification of any policy proposal, involves a process of framing, using all means available to political actors: creation of a policy narrative, production of favourable analysis material, and the creation and mobilisation of stakeholders willing to fight for the project. While this is in a sense common to all policy proposals, there is a case to be made that mega-projects are in fact particularly resistant to argumentation based on cost-benefit analysis, as will be further elaborated below.

As described in the introduction of this dissertation, the public sector has experienced an increased fragmentation in the last decades (Rhodes, 1996; Hill & Hupe, 2002; Osborne, 2006). This has been argued to make the public sector more difficult to govern as more stakeholders need to be involved in decision-making processes. This problem is particularly evident in large projects such as mega-projects. As decision making essentially is about establishing an interpretation about a situation that makes a particular decision justified, this can be assumed to be more difficult if there are more actors with diverse interests involved. Traditional forms of instrumental-rational analysis such as cost-benefit analysis have two properties that make them difficult to use in this situation. Primarily, they are built on a certain set of assumptions that can be disputed by an outsider. An agreement to use a particular form of analysis can therefore be difficult to make if the assumptions and interests become more diverse. Secondly, analyses of this type require and produce clarity. While this is an intended, and from an instrumental-rational perspective desirable, ability, it might also be a problem from a political perspective. Ambiguous projects are perhaps more attractive to diverse actors as they might read different interpretations into them. Agreement is thus facilitated by ambiguity, as suggested by earlier research (Sahlin-Andersson, 1998; Stone, 2002; Brunsson, 2007).

Another reason why cost-benefit analysis results seem to have less influence than assumed by earlier research could be that the problems facing the public sector have changed, or at least that the perception of the problems has changed (Hill & Hupe, 2002; Osborne, 2006). As discussed in the third paper, there seems to be a sense in the transport sector that radical change is necessary to deal with rapid technological development and sustainability challenges, and

that this type of change is difficult to justify using the traditional instrumental-rational planning models. Instead, a policy narrative focusing on a possibility to take radical action to change the course of history becomes attractive. The traditional predict-and-provide models imply that the planner is a follower of the development and that he or she acts reactively to meet the demands of society. Furthermore, the preferences that greatly affect model results are generally assumed to become stable over time while a dynamic view of transport system development generally aims to change preferences. The dynamic perspective in the narrative presents the planner as the creator of the future, and the decision today as an opportunity to make real difference. It seems likely that a political environment where a sense of urgency is predominant has contributed to the attractiveness of the policy narrative.

While this discussion has generally played down the importance of cost-benefit analysis in mega-project planning as compared to earlier literature, this does not mean that the analyses should be seen as unimportant. Certainly, what is defined as rational can be shaped by argumentation, and calculations can be made to support various argumentative positions. A dominant definition of rationality, however, can also shape what types of arguments are used and how they are evaluated. The relationship is, thus, reciprocal. While instrumental-rational models are sometimes influenced by the need to argue, argumentation will need to adapt to conceptions of rationality as well. That is, a dominant instrumental-rational model can impose certain requirements in a policy discussion that in turn have the potential to shape argumentation. The fact that the Swedish high-speed rail project is heavily criticised for its poor outcome in the cost-benefit analyses suggests such an effect. To take one example, the cost-benefit analysis framework provides boundaries for the discussion on social profitability that require the project proponents to argue for social profitability in economic terms. The project leadership committee has clearly been aware of this and much of its work has been directed to countering and deflecting criticism coming from a cost-benefit analysis-perspective.

One contribution of this dissertation to mega-project research is the suggestion that mega-projects, like all policy proposals, need to be understood as part of political processes where policy narratives and calculations are tools for political actors to frame their decisions and actions. In the political world, a cost-benefit analysis is merely a product of a narrative of instrumental-rationality, which despite its claims to objectivity is just another narrative alongside several others. Depending on their point of view, politicians can, and frequently do, pick and choose opportunistically between facts, factoids and

fictions to support their political interests. And like the case of high-speed rail in Sweden has shown, it is increasingly difficult to draw the line between what is an objective fact and what is not. Facts are dependent on framing, much like all statements. It is perfectly sensible to argue that the cost-benefit analysis result is a legitimate basis for cancelling the project. It is, however, equally legitimate to argue that the cost-benefit analysis, for reasons discussed above, is insufficient to assess large infrastructure projects and that a high-speed railway is still a good proposal. This notwithstanding, however, it is possible to maintain that certain precautions can be taken to balance optimism bias and strategic misrepresentation in mega-projects, as in transport policy more generally. This is elaborated in the next section, which focuses on the implications of the findings for Swedish transport policy.

## 6.4 Implications for Swedish transport policy

From a policy perspective, the situation considering cost overrun and benefit shortfall in mega-projects is deeply unsatisfactory. Judging by earlier research, what is necessary to deal with the situation is strategies for sobering optimism bias and countering strategic misrepresentation. Attempts at this has been done in Swedish transport policy for example by the inclusion of successive calculation practices designed to identify cost-overrun earlier in the planning process (Andersson, et al., 2017). The introduction of negotiations has also been argued as a way of countering the development. The main argument has been that if local governments are asked to contribute to financing they will be more interested in keeping costs down, which will reduce the risk of costly solutions to accommodate local demands.

The findings in this dissertation question whether the National Negotiation on Housing and Infrastructure has succeeded in this respect. This is mainly due to the prioritisation of justification and getting things done over finding out what to do. While the finding out what to do perspective embraces clarity, exploration of alternatives and calculation of consequences, getting things done relies on closure, reduction of alternatives, and an embrace of ambiguity as long as it makes the process move forward (Sahlin-Andersson, 1998; Stone, 2002). The committee directive, or terms of reference, states that the mission for the National Negotiation on Housing and Infrastructure is to “produce a plan for rapid implementation of a high-speed railway” (Government Offices of Sweden, 2014b). Admittedly, this involves making a plan which relates to



finding out what to do. The purpose of the plan is, however, to get things done. Judging by the findings of this dissertation, it seems that getting things done has triumphed over finding out what to do in how the mission was interpreted by the committee members. This has led to a process aiming to justify the project rather than produce a fair evaluation. This appears to have resulted in a process that risks exaggerating benefits and disregarding costs even more than would be the case in the traditional process.

That there is a tug-of-war between political decision makers wishing to get things done and technocratic bureaucrats trying to find out what to do has been suggested earlier as an explanation for why analysis reports are often ignored in decision-making processes (Albaek, 1995; Flyvbjerg, 1998; Sager & Ravlum, 2005; Annema, 2013; Mouter, 2016). Except for the complications in terms of reaching a decision, politicians are unwilling to bind themselves too closely to calculations and analysis as this reduces their room for political manoeuvring. Earlier research (Hultén, 2012; Hasselgren, 2013) has described that Swedish transport policy is moving from a decision-making culture characterised by instrumental rationality towards a decision-making culture characterised by pragmatism, where greater room is provided for politicians to take decisions on political grounds and to justify them on grounds other than strictly the results of instrumental-rational models.

The Swedish high-speed rail project and the National Negotiation on Housing and Infrastructure represents a new step in this direction through the implementation of the negotiation procedure for station localisation and co-financing, but also through how the project leadership committee members have interpreted their role. This time, a government-appointed committee openly criticises cost-benefit analysis and argues that decisions on large infrastructure projects should not be taken based on them. It openly uses numbers from methodologically flawed analyses in its decision-making processes and to back up its arguments. Most of all, it bases its argument for the project on a narrative contradicting the cost-benefit analysis that has been made and it is successful in making stakeholders involved with the project support this. Taken together, this is a case where a policy narrative seems to have taken precedence over cost-benefit analysis in a sector often assumed to be reliant on cost-benefit analysis and instrumental-rational models.

It is possible to think of several threats associated with the shift towards narrative and away from instrumental-rational models for decision-making. The first is the imminent risk that more bad projects are approved. In this case this seems to be a real threat. The Swedish high-speed rail project is both very

large and very unprofitable in cost-benefit analysis, suggesting that it not only delivers too little benefit but also that it will crowd out a large number of alternative uses for the investment funds merely due to its size. Even if the cost-benefit analysis itself is not trusted to give a fair estimation of costs and benefits, very few substantial arguments have been produced to convincingly contend otherwise. Considering the bias in the negotiation process, where the focus is on arguing for the project and producing justifications for why it should go through, there is a high probability that negative aspects are disregarded. While the planning fallacy through optimism bias is a well-known explanation for why costs are so often under-estimated and benefits over-estimated (Kahneman & Tversky, 1979; Flyvbjerg, 2014), this does not seem to have affected how the Swedish high-speed rail negotiation process was designed. Analyses were made to disregard costs and to make local government officials envision the benefits of investment. A narrative of progress was developed to counter criticism about high costs. The negotiation element has institutionalised a strategy of over-bidding in terms of finding benefits, particularly as the co-financing has been limited compared to the possible gains for the involved local governments. The conclusion is therefore that if the goal was to find out whether to build a high-speed railway, the National Negotiation on Housing and Infrastructure is a failure. But if it was intended to get it done, it seems to have done a pretty good job of producing a justification for why it is a good idea, for better and for worse.

# 7 Contribution of this dissertation

This dissertation presents a case study on the Swedish high-speed rail project and the National Negotiation on Housing and Infrastructure. Its over-arching purpose is to analyse how mega-projects are justified.

The dissertation interprets the Swedish high-speed rail project and the National Negotiation on Housing and Infrastructure as a case of how mega-projects are justified. It finds that the Swedish high-speed rail project is being justified based on a combination of strategies: widening the scope, producing encouraging numbers, creating and mobilising stakeholders, and arguing using a policy narrative. It shows how the project leadership skilfully bypasses criticism from cost-benefit analysis and succeeds to gather support for a project despite the numbers.

*The first contribution* of this dissertation is to mega-project research by questioning the tendency of extant research to emphasise development of improved calculative practices as a solution to the planning fallacy in mega-projects. Instead, the findings in this dissertation suggest that justification of mega-projects, like the justification of any policy proposal, involves a process of framing using all means available to political actors: creation of a policy narrative, production of favourable analysis material, and the creation and mobilisation of stakeholders willing to fight for the project. There is perhaps even a case to be made that mega-projects are particularly resistant to cost-benefit analysis results due to their size, far-reaching consequences, multiple stakeholders with diverse interests and long time horizons; all factors that raise legitimate questions around the suitability of cost-benefit analysis as a fair evaluation tool.

*The second contribution* of this dissertation is to the literature on the use of analysis reports in decision-making by emphasising the importance of including the process into the scope of study. Creation and mobilisation of stakeholders by involving them in the production of analysis reports has been important in building support for the Swedish high-speed rail project. The process for producing the reports has thus been used to promote the project.

Together with opportunistic use of the report results, this has served to institutionalise the project on several levels as well as to build political momentum. This improves the project's chances of approval and makes it likely that it will continue to resurface in the future, even if it is rejected at the present decision point.

*The third contribution* of the dissertation is to research on Swedish transport policy. The dissertation finds a widespread scepticism towards cost-benefit analysis among decision-makers, particularly at the local government level. Together with the finding that a policy narrative has been important in shaping their perceptions about the project, this indicates a shift away from instrumental-rational decision making towards a greater focus on argumentation. This suggests that an earlier observed trend away from instrumental-rational decision making is continuing.

*The fourth contribution* of this dissertation is to Swedish transport policy practice by providing an analysis of the negotiation method of decision making in Swedish transport planning. The National Negotiation on Housing and Infrastructure has been presented as an attempt to reconcile conflicting demands and provide a solution to the governance challenge facing infrastructure planning. This dissertation argues that while the negotiation has indeed been successful in mobilising support in order to improve the project's chances of implementation, it has at the same time increased the risk for optimism bias by focusing so much on justification. From an institutional perspective, given the challenges to mega-projects of over-estimation of benefits and under-estimation of costs, this requires careful consideration. The process as it was set up has likely amplified these problems.

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# 9 Research papers

Paper 1: A novel approach to economic evaluation of infrastructure? Examining the benefit analysis in the Swedish high-speed rail project

Published in Case Studies on Transport Policy, 2017, Volume 5, pp. 492-498

Paper 2: Planners' analysis and opportunism – benefit analysis in the Swedish HSR-project: a preliminary analysis

Published in European Planning Studies, 2017, 25(12), p. 2232–2249.

An earlier version of this paper was presented at the 15th International Conference on Competition and Ownership in Land Passenger Transport at Stockholm School of Economics, Stockholm, Sweden, August 2017

Paper 3: Justifying a mega-project despite the numbers – an analysis of the Swedish high-speed rail narrative

Presented at the Swedish transportation research conference 2017, Royal Institute of Technology, Stockholm, Sweden, 2017-10-18

Submitted to Project Management Journal in June 2018

Paper 4: What frames perceptions on mega-projects? – Policy narrative versus cost-benefit analysis in the Swedish high-speed rail project

Presented at EIASM Public Sector Conference 2018, Lund University School of Economics and Management, Lund, Sweden, 2018-09-04

Submitted to Financial Accountability & Management in November 2018

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# Justifying Mega-Projects

## An Analysis of the Swedish High-Speed Rail Project

Mega-projects are a growing phenomenon worldwide. More and more projects are started and they grow ever bigger in size. At the same time, there is overwhelming evidence that mega-projects tend to run late, overrun in terms of costs and fail to deliver the expected benefits. Paradoxically, more and more money is invested in projects that fail to deliver on their promises.

This dissertation analyses how mega-projects are justified through a case study of the Swedish high-speed rail project and the National Negotiation on Housing and Infrastructure (Sverigeförhandlingen). The Swedish high-speed rail project is arguably the biggest project ever initiated in the country and fits the definition of a mega-project. It is planned to connect the three largest cities Stockholm, Gothenburg and Malmö with high-speed rail tracks at an estimated investment cost of 230 billion SEK (€23.1 billion). The project is highly controversial in the public debate. It impacts a large number of people and involves substantial financial commitment. Interestingly, it is also heavily unprofitable in cost-benefit analysis calculations. Based on these calculations, the project is unprofitable and should be cancelled. Still, the project has been allowed to continue by two consecutive governments. Analysing how this project is justified makes it possible to address the wider issue of why mega-projects continue to hold such appeal among decision makers despite their track record.

The dissertation finds that the Swedish high-speed rail project is being justified based on a combination of strategies: widening the scope, producing encouraging numbers, creating and mobilising stakeholders, and arguing using a policy narrative. It shows how the project leadership skillfully bypasses criticism from cost-benefit analysis and succeeds to gather support for the project despite the numbers.

The research has been done at Lund University School of Economics and Management and K2 – the Swedish Knowledge Centre for Public Transport.



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