



university of
 groningen

faculty of spatial sciences

The policy transfer of critical success factors regarding cycling

The journey from bicycle city Groningen (NL) to Reading (UK)

Bachelor Thesis
BSc Environmental Infrastructure & Planning

By Ilse Nederlof - S2350580

Supervisor:
Tim Busscher

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Preface

Whereas this bike ride starts here for you, one bike ride ends here for me. This Bachelor thesis is my final product of my Environmental Infrastructure & Planning (EIP) degree. During my course at the University of Groningen I have gained knowledge in multiple disciplines. In addition, studying abroad in Reading has definitely enriched my course. I learned to adapt to another context in all kind of aspects, also in terms of cycling. The contrast with bicycle city Groningen was huge. This had opened my eyes and was the main inspiration for this thesis: Why can not Reading be a bicycle city? From then on I was wondering how cycling could be integrated in Reading.

Overall, EIP contributed to look at the environment in a different way. That is what I like most about the Bachelor EIP: being creative with the ingredients you have. However, combining the same ingredients does not ensure the same outcome. Whether that is in the kitchen when baking cakes with my housemates (thank you, it was the most perfect thesis relaxation), or in terms of transferring bicycle key factors to the UK; It all depends on the journey towards the destination. By reading this thesis you will understand how the latter journey may look like.

But before commencing, I would like to thank my supervisor Tim Busscher. His advices brought me on the right path and ensured I did not get entirely lost during the research process. Also, I would like to thank all interviewees who took the time to share their interesting knowledge and experiences with me. Because of them I was able to reach this final destination.

Having said that, it is time for your journey to start. Hopefully you will enjoy your (way to) reading.

Ilse Nederlof
Groningen, June 2015

Abstract

Integrating cycling into the traffic and transport system has become more prevalent in Europe. With this regard, Dutch bicycle cities are increasingly taken as example for doing so. The process of taking over policy aspects from another context is identified as policy transfer. Although there is much research done on policy transfer, there is not much academic literature that focuses on the transfer of cycling policies. Therefore this thesis examines how a bicycle city can be used as an example for a place that desires to increase cycling rates. In order to gain more insight into this process, a qualitative in-depth study is conducted using a case study methodology. The cases are Groningen, a mature bicycle city within the Netherlands, and, Reading, a place with low cycling rates that desires increasing cycling rates. Document analysis is done, and interviews were conducted. To obtain a comprehensive overview the interviewees were cycle experts from various fields: including policy-makers on national and local level, a member of Reading's Cycling Campaign, cycling consultants, and a Transport Design researcher. This study found out that by searching for the critical success factors concerning cycling, it is equally important to look for aspects within the planning process as looking for aspects within the implementation process. The main aspects that Reading can learn from Groningen, include that providing safe bicycle infrastructure is necessarily to improve cycling rates. However, merely implementing infrastructure will not be sufficient in order to increase cycling rates on the long-term. Just like within the planning process of bicycle cities, cycling has to become consistently part of the transport system in order to achieve higher cycling rates on the long-term. When looking at the implementations that have been done concerning cycling it is important to look for the overarching goals rather than the specific elements. With regard to the transfer of planning processes further research is necessary in order to better understand how this could be transferred.

Keywords: Policy Transfer, Cycling, Bicycle city

Table of Contents

1. Introduction	1
1.1 Subject	1
1.2 Purpose	1
1.3 Structure	1
2. Literature review	3
2.1 Introduction	3
2.2 Policy transfer	3
2.3 Factors influencing cycling use	5
2.4 Conceptual model	7
3. Methodology & Methods	9
3.1 Research approach	9
3.2 Selected cases	9
3.3 Data collection	11
3.4 Data analysis	12
4. Results	13
4.1 Bicycle city characteristics	13
4.2 Context factors influencing cycling use in Groningen and Reading	14
4.3 Policy Transfer	20
4.4 Advice to Reading	21
5. Conclusion & Discussion	23
5.1 Conclusion	23
5.2 Discussion	23
References	25
Appendix A: Interview guides	28
Appendix B: Codes	32
Appendix C: Maps	33
Appendix D: Stimulating and constraining factors influencing cycling use	36

1. Introduction

1.1 Subject

Over the past two decades, when governments were searching for policy solutions, they have been growingly seeking for solutions from abroad (Marsden & Stead 2010). In academic literature this process is often defined as *lesson-drawing* or *policy transfer* (see Rose, 1991; Dolowitz and Marsh 2000). Policy transfer also occurs within traffic and transport approaches; whereas governments are looking for solutions abroad, policy entrepreneurs are selling their policies all over the world (Dolowitz & Marsh, 2000).

In particular, integrating cycling into the traffic and transport system is worldwide becoming more prevalent (Fietsberaad, 2009). Congestion and increasing density in cities calls for transformation in the conventional traffic transport system (Banister, 2008). In addition, the urgency of reducing greenhouse gas (GHG) emissions, results in the urgency to reduce transport emissions. In Europe, more than half of the GHG emissions that has to be reduced by 2050, derives from transport (European Commission, 2011). Integrating cycling could be part of the solution to both mobility problems as well as the reduction of GHG emissions (Fietsberaad, 2014).

To many countries it is quite new to integrate cycling into their transport system. In order to not reinventing the wheel, knowledge is often gained from experienced institutions and governments. Consequently, international interest has risen in the Dutch cycling approach (Fietsberaad, 2009). According the Dutch Cycling Embassy (2015): "The Netherlands provides the widest range of cycling know-how, products and infrastructure". Moreover, many cities in the Netherlands are identified as bicycle cities. Examples include Amsterdam, Zwolle and Groningen. Main reason for this is their type of transport policy along with high cycling share in the modal split. These bicycle cities can therefore be considered as role models for integrating cycling into the traffic and transport system (Fietsberaad, 2014). However, to what extent these cities can be taken as example is unclear. Much research is done on policy transfer, but less research has been conducted on policy transfer on the extent of cycling (Marsden & Stead 2010; Heichel et al., 2005). Investigating how these cities can be taken as example, is useful to cities that desire increasing cycling rates. A study on policy transfer with regard to cycling is therefore not only relevant for science, but also relevant for practical reasons.

1.2 Purpose

Cycling mode share of a city is dependent on a wide range of factors. As these factors vary between cities, transferring policies from one place to another results in different outcomes; What does succeed in city A does not necessarily mean that it will succeed in city B, too (Rose, 1993). Although there is much research done on policy transfer, there is not a clear-cut answer how policy transfer with regard to cycling should be done. The purpose of this study is to gain more insight into how a bicycle city can be used as example for a place that desire to integrate cycling in their traffic and transport system, in order to increase cycling use in their city. Hereafter an advise can be established for a certain place concerning what processes and implementations should be done. Drawing upon this, it can give new insights for the generic process of policy transfer with regard to cycling in particular.

Doing so, this research focuses on the following central question: "*In what way could a bicycle city be an example to a place that wants to increase cycling rates of all trips?*"

To answer the central question this research will be discussed on the basis of the following subquestions:

- I. What characterises a bicycle city?
- II. What are the recent developments regarding cycling policies?
- III. What are the stimulating and constraining factors that influence cycling use?
- IV. How influence involved actors and the degrees of transfer the transfer?
- V. In what way could essential, stimulating factors of a bicycle city be implemented into the place that wants to increase cycling rate?

1.3 Structure

In order to answer these research questions, the first section outlines academic findings on policy transfer and on factors that influence cycling use. This literature review concludes with a

conceptual model, that serves as guideline for the entire study. The third chapter clarifies the methods and methodology being used in this research, and also exemplifies the selected cases; Groningen (NL) and Reading (UK). The fourth chapter includes the results of the study. The first section of the results briefly illustrates the characteristics of a bicycle city, before examining the developments of both cases with regard to cycling. On grounds of the stimulating and constraining factors that influence cycling use in both cases, the transferrable is examined in the third paragraph. The fourth section of the results focusses on what influences the transfer. The final section of the results provides an advice for Reading concerning how Reading could learn from Groningen with regard to their entire cycling system. Eventually, in the final chapter this paper summarises the general contribution of the findings to academic knowledge, and evaluates the interesting issues within the process of this research.

2. Literature review

2.1 Introduction

The main topics relevant in this study are, on the one hand factors influencing cycling use, and, on the other hand, policy transfer. To the author's knowledge an academic definition of 'bicycle city' does not exist. Nonetheless, it is reasonable to state that a bicycle city refers to a city that has relatively high cycling rates. Thus, it will be helpful to clarify factors that influence cycling use, to better understand the development of higher cycling rates within a bicycle city. In addition, when speaking of transferring critical success factors from a bicycle city towards another place, 'critical success factors' needs a brief consideration. Critical success factors can be subdivided into factors from, on the one hand, the built environment and the socio-economic context, and on the other hand the political context. Yet, there is an interaction between these factors. In this sense, it is relevant to clarify the process of policy transfer, in which the political context is at the core, but aspects of all sorts of fields are involved. Therefore, this chapter will give an overview of both existing insights of policy transfer and factors influencing cycling use, on the basis of academic literature. Given the study objectives of this research, it focuses on issues relevant for the developed world and in particular, the United Kingdom (UK) and the Netherlands (NL).

2.2 Policy transfer

Policy transfer is a process of using knowledge about policy-making from one certain environment, and implementing it into another (Marsden & Stead, 2010). A definition that is most commonly used in academic literature originates from Dolowitz and Marsh (1996), in which policy transfer refers to "[...] a process in which knowledge about policies, administrative arrangements, institutions etc. in one time and/or place is used in the development of policies, administrative arrangements and institutions in another time and/or place" (p. 344).

Policy transfer often occurs when public organisations do not have the necessary in-house expertise to cope with problems they face (Stone, 1999). In this case, they are often seeking for solutions outside their own organisation to gain knowledge from other experienced governmental or non-governmental bodies. In this sense, Dutch governments and companies are well-experienced in integrating cycling into the traffic and transportation system, and could therefore help countries and organisations that are not familiar with this.

In order to examine this process, Dolowitz and Marsh (2000) established a framework which can be helpful to researchers and practitioners for evaluating this phenomenon. This framework identifies the process by means of seven main questions, which indicates the several aspects of policy transfer. To this end, this framework gives structure to the policy transfer process. Whereas this framework is often used for evaluating policy transfer processes afterwards, it can contribute in predicting the outcomes beforehand. As Rose (1991) put it: "Lesson-drawing goes well beyond post hoc evaluation research about a particular programme in a single country. It is also concerned with the prospective question: Can a programme now operating in country X be put into effect in country Y in future?" (p. 19) Thus, applying this framework contributes in understanding what facets are involved in the transfer of critical success factors regarding cycling. This understanding forms the basis for predicting the outcomes of the transfer as closely as possible. The seven main questions within the framework are outlined below:

1. *Why do actors engage in policy transfer?*

Initially, three different types can be distinguished with regard to the form of policy transfer (Evans, 2009). These are voluntary transfer or lesson-drawing, negotiated transfer and direct coercive transfer. Given the purpose of this study, the latter two are not further explained because they involve a certain coercion. For example, developed countries can support underdeveloped countries on condition that they change their existing policies. This certainly not applies for bicycle policies. However, voluntary transfer or lesson-drawing transfer is relevant, since it is a rational, action oriented approach, and is applied when policy agenda has to be upgraded if one is not satisfied. Therefore, this approach reflects to what extent a place that desires to increase cycling rate can learn from a bicycle city. Seeking for a solution elsewhere, is considered as cheap and quick, assuming that the outcomes are always successful (Marsden & Stead). Clearly, this is not always the case. Also, the outcome of this learning is not easy to measure, since important detail within the political and socio-economic context may be missed (Common, 2010).

II. Who is involved in the policy transfer process?

Some literature suggests that the two parties between whom the transfer occurs, can be distinguished into borrowers and lenders (for example see Rose, 1993). Often this distinction is not clear-cut, but likely a process in which both parties involved can learn from each other (Dolowitz and Marsh, 2000). However, in terms of a place that wants to increase their cycling rate, and seeking for solutions at a mature bicycle city, it is quite obvious that in the beginning of this process the bicycle city can be defined as the lender, whereas the place that desires higher cycling rates can be defined as the borrower. Several actors from both parties are engaged in the policy transfer. Dolowitz and Marsh (2000) distinguish the following categories: elected officials, political parties, bureaucrats/civil servants, pressure groups, policy entrepreneurs and experts, transnational corporations, think tanks, supra-national governmental and nongovernmental institutions and consultants. The outcomes of policy transfer derives from the actions taken by the actors involved. Therefore it is important to estimate what actors are most influential within the concerning programme. By this end, MacKinnon et al. (2008) suggests that structure and agency of issues has to be reviewed to grasp the impact of those actors on the outcomes of the process.

III. What is transferred?

The content of policy transfer goes far beyond policy instruments only. Dolowitz and Marsh (2000) indicate eight categories of various transfers that are relevant for studying policy transfer: policy goals, policy content, policy instruments, policy programs, institutions, ideologies, ideas and attitudes and negative lessons. Obviously, some are more easy to transfer than others. (OECD, 2011). To illustrate: policy instruments, policy programs and institutions may be far more complicated to transfer than ideologies and policy goals. This particularly applies for transfers in which socio-economical, political and institutional context between 'borrower' and 'lender' are different (Marsden & Stead, 2010). In addition Rose (1991) states that identifying what can be transferred is about generalising: concentrating on too specific factors rather than the generic, causes confusion on "[...] what is generic and potentially transferrable with what is specific to time and place" (p. 20). Therefore, generalising is important in order to not miss the essential elements of the transfer objects.

IV. From where are lessons drawn?

Various factors lies on the basis of selecting places and/or institutions to draw a lesson from. The most important may be the degree of knowledge and expertise, among other factors such as geographical proximity, constitutional system, language and culture (Marsden & Stead, 2010). When an institution lacks in-house expertise locally or nationally, lessons have to be drawn internationally. For example, cycling is not very common in the United Kingdom. Therefore, if one council in the United Kingdom seeks for the best solution to integrate cycling in the traffic and transport system, it is likely they go overseas in order to obtain knowledge from institutions and experts from the Netherlands, who are experienced in the extent of cycling. In this case context in all sorts of fields, for example in culture aspects and policy-making, are most likely to be different. As mentioned above, this will increase the complexity of the transfer. Thus, "[...] some adaptation to take account of local circumstances will be necessary" (Rose, 1991, p. 21). In order to avoid consequently inappropriate transfer, Dolowitz and Marsh (2000) claim that it is necessary to examine economic, social, political and ideological contexts of both parties in-depth.

V. What are the different degrees of transfer?

In distinguishing to what extent transfer can take place Dolowitz and Marsh (2000) mainly draw upon the findings of Rose (1991). These includes the following four different degrees of transfer: a) copying, which involves direct and complete transfer; b) emulation, which involves transfer of the ideas behind the policy or programme; c) combinations, which involve mixtures of several different policies and d) inspiration, where policy in another jurisdiction may inspire a policy change but the final outcome does not actually draw upon the original idea. However, copying might seem the easiest way of transfer, Rose (1991) claims here "[i]n the real world, we would never expect a programme to transfer from one government to another without history, culture and institutions being taken into account" (p. 21). Thus, is very unlikely to transfer objects as a whole and implement it without any adjustments concerning the context of the lender.

VI. What restricts or facilitates the policy transfer process?

Within the theoretical framework, Dolowitz and Marsh (2000) point out that concerning policy failure at least three factors are of interest. The first one is 'bounded rationality'. Marsden & Stead (2010) illustrates this as follows: "the search for 'solutions' is bounded by time and resources and also by the search area (i.e. the areas or examples considered 'worthy' of examination)." This means that actors (have to) work with limited information and by this end, influencing factors may be missed. In addition, the extent of existing and past policies influence the transfer process (Rose, 1993). "New programmes cannot be constructed on green field sites, they must be introduced into a policy environment dense with past commitments" (p. 78). It is therefore crucial to consider any adjustments to introduce the transfer object into the existing policy environment. The third factor is the degree of complexity of what is being transferred. The more complex the transfer object, the more difficult it is to let it succeed. Thus, it is necessary to be aware of these restraining factors when transferring critical success factors of a bicycle city. Policy environments have to be reviewed of both parties and complex transfer objects have to be examined very carefully.

VII. How successful is the policy that was transferred?

To date there is limited theoretical literature with regard to how outcomes of policy transfer can be measured (Marsh & Sharman, 2009). Whereas this question should be applied to a policy transfer post hoc, the above mentioned framework can be useful in preparing a 'programme' of policy transfer. Taking these suggestions into account, policy transfer is less likely to fail than without following these suggestions.

2.3 Factors influencing cycling use

In the previous section it became clear that when transferring critical success factors from a bicycle city to another place, it is essential to take differences in context into account. In order to understand what aspects within the context of a city influence cycling use, this section outlines the academic findings on factors that influence cycling.

We move forward to the framework of Heinen (2011), which includes detailed factors that influence peoples' travel mode regarding cycling. Heinen (2011) distinguishes 4 variables: Spatial, Socio-economic, Psychological and Remaining variables. These categories will be explained in the following paragraphs.

2.3.1 Spatial variables

Spatial variables include the factors that belong to the built environment and the natural environment.

Built Environment

Literature suggests that higher densities have higher cycling shares as result (Litman, 2007), where density refers to the number of homes, people or jobs per unit of land area (Litman, 2015). Density influence the share of cycling both directly and indirectly: due to increasing attractiveness of cycling and increasing disadvantages of other modes. To illustrate the former, density goes along with more options to invest in for example cycle paths, a better infrastructure and improvements in cycling safety. The reason for this is that per capita the costs of such interventions decreases with density, since the costs are divided over a larger number of people per unit of area when density is high. To clarify: a higher density leads to a decline in travel distance between activities and consequently a reduce in car use. 'In denser urban areas, distances between locations are shorter, and consequently can be bridge more easily on foot or by bicycle' (Heinen, 2011, p. 25). Hence, smaller distances result into an increase in active modes such as walking and cycling. Moreover, the hustle and bustle in compact areas goes hand in hand with decreasing traffic speed which affects car use negatively. In addition, parking space are often insufficient and extremely high as land prices increase with density. All these factors affect the choice of peoples' transport mode. Studies found out that people living in more compact areas prefer modes such as cycling and walking over automobiles modes of travelling (Litman, 2015).

Trip distance is negatively associated with share of cycling mode: "Higher densities and mixing of land uses probably encourage more cycling, simply because trip origins and destinations are less spread out, so that trip distances tend to be shorter, and thus more bikeable" (Pucher and Buehler, 2006, p.269). Since the higher the trip distance, the more effort and time is required (Rietveld,

2000). A higher land use mix, means less trip distance, which means a positive effect on cycling (Litman, 2015).

Bicycle infrastructure includes bicycle paths, bicycle lanes and 'normal' roads, whereas the latter refer to roads that are intended for multiple modes (bicycle, automobiles, public transport) (Heinen, 2011). Studies have found out that the type of infrastructure certainly influences mode choice. In general, bicycle paths are preferred over bicycle lanes and normal roads. However, preferences are different among various groups as non-experienced cyclists consider a good cycling infrastructure as more important than experienced cyclists (e.g. Garrard *et al.*, 2008; Heinen, 2011).

Pucher (2001) claims that in countries with good facilities in bicycle infrastructure, cycle rates are high. In addition, these countries are considered as safe to cycling in. Several studies agree with this: safety issues and insufficient qualitative infrastructure for cycling are constraining factors to opt for the mode of cycling (Panter *et al.*, 2013; Haybatollahi *et al.*, 2015). It is often assumed that increasingly risk of having an accident has negative influence on cycling (e.g. Rietveld and Daniel, 2004; Pucher and Buehler, 2006).

Natural Environment

In contrast to automobile behaviour, the factors hilliness and landscape certain does affect cycling behaviour. The higher the slope, the more effort is needed when cycling. Therefore, several studies found out that slopes are negatively related with bicycle use (Heinen, 2011). Also the weather may influence cycling activity: "(The chance of) rain, low temperatures and darkness result in people choosing to cycle less" (Heinen, 2011, p. 33).

2.3.2 Socio-economic variables

There are many findings on the association with socio-economic variables and cycling use. Examples include that it has been found that car ownership has negative impact on cycling (e.g. Pucher and Buehler, 2006; Dill and Voros, 2007). In addition, several personal characteristics have positive impact on the change of people cycling, such as being a student and being native Dutch (Heinen, *et al.* 2011).

Despite the great range of findings, both the direction of these relations, and the degree of causality are still unclear. Heinen *et al.* (2011) claims that socio-economic variables are more dependent on psychological variables, namely, social values and attitudes. These are further explained in the next paragraph.

2.3.3 Psychological variables

'The theory of planned behaviour' (TPB) is the seminal theory that is used in studies understanding travel behaviour (Ajzen, 1991; Heinen *et al.*, 2011). According to this theory, social values and attitudes are the prime drivers of behaviour. Attitude refers to "[...] the expectation of all the outcomes of an activity, and the personal value of these outcomes" (Heinen *et al.*, 2011, p. 35). Social values involve *social norms*, that refer to "[...] norms held by a society, or by smaller groups, which influence and regulate behaviour by functioning as informal social controls" (Heinen *et al.*, 2011, p. 36). People often behave according to accepted standards in a particular group. Pucher *et al.* (1999) found that cycling's public image is related to common attitude towards cycling within a society or specific country.

Important to note is that within TPB, it is assumed that people act on basis of rational decision-making. However, Bamberg & Schmidt (2003), state that in the decision of repetitive behaviour, not all influencing factors are taken into account. Thus, if habits are involved, this assumption of rational thinking may be considered as invalid. People are not likely to consider transport alternatives when they are attached to a certain transport mode. Therefore, habits need to be broken if modal change is desired. If so, it is reasonable to look at the reasons people give for (not) to cycle.

2.3.4 Remaining variables

The last category of factors that influence cycling use includes the aspects time, cost and effort. These aspects belong to utility theory: "Utility theory assumes that each individual acts to maximise his or her utility" (Heinen *et al.*, 2011, p. 38). When using this theory in understanding travel mode

choice, it is assumed that increasing time, cost and effort of a mode option leads to a decline in the probability that this option will be chosen. Important to note is that cyclists that opt for cycling for leisure or sport goals are not taken into account within the utility theory.

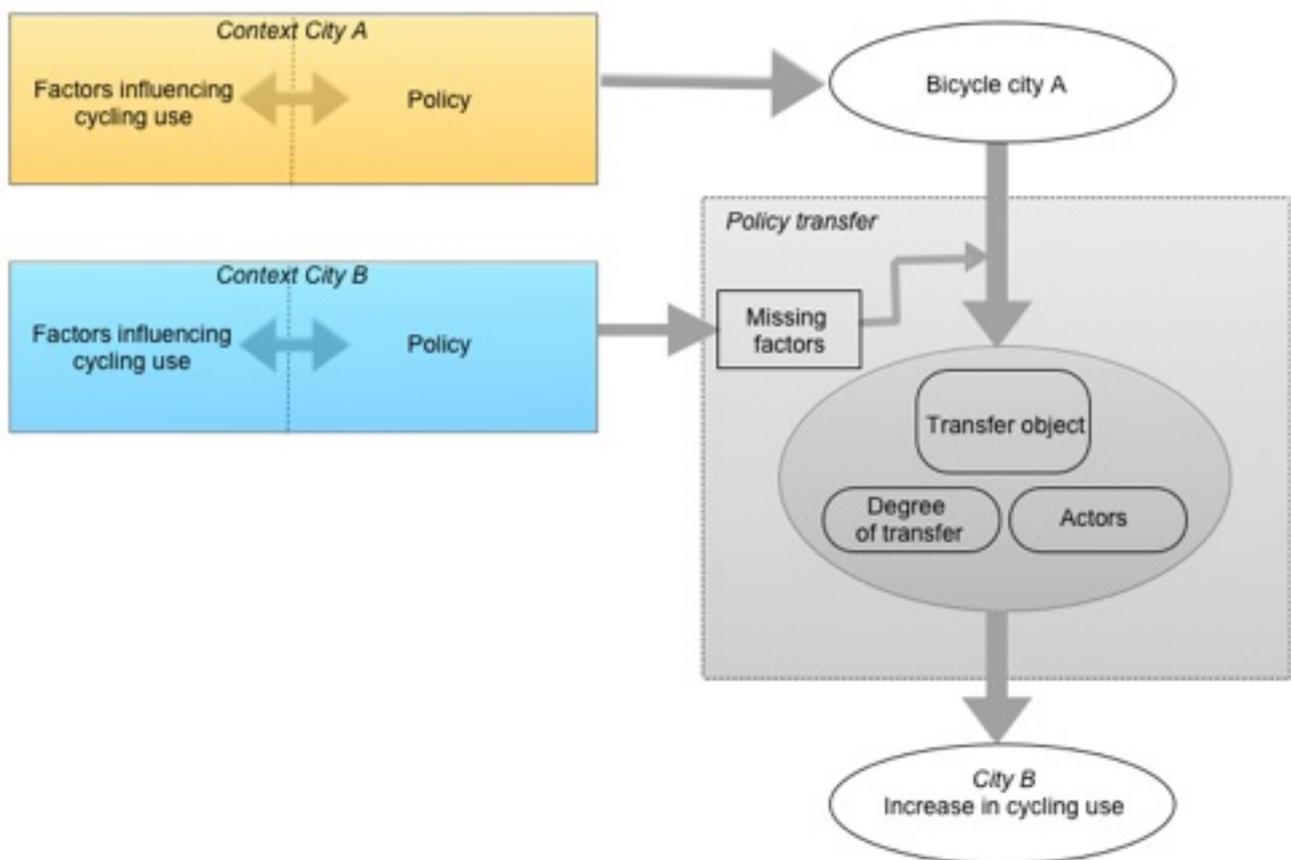
To estimate the impact of time, cost and effort on cycling use, it is important to consider all these aspects with regard to cycling in comparison with time, cost and effort of other existing mode options (Rietveld and Daniel, 2004; Puehler and Buehler, 2006; Heinen et al., 2011).

Cycling is a relative cheap transport mode and therefore transport cost has a relatively positive influence on cycling. In contrast, time has a relatively negative impact on cycling use; travel time for cycling is considered as more unpleasant than travel time for other transport modes (Wardman et al., 2007). Increasing time and distance of a trip often results in more effort needed, and thus in less cycling (Heinen et al, 2011).

2.4 Conceptual model

On the basis of all findings in the literature review, the conceptual model for this study has been developed. This model is shown in Figure 2.1 and will be explained in the following paragraph.

Figure 2.1: Conceptual model



The first part of the policy transfer process with regard to cycling concerns the differences and similarities in context between city A and city B. In which city A refers to the bicycle city, and city B to the place that desires increasing cycling rates. The factors that influence cycling use consist of the four categories that are summarised in paragraph 2.3. These context-specific factors interact with policy which is also context-specific for both cities. Policy includes on the one hand, the planning process behind the policies, and, on the other hand, the content of policies.

Whereas the context factors in city A result in high cycling rates, city B lacks the critical success factors to achieve high cycling rates. These missing factors are the basis to determine what factors have to be transferred from city A to city B, in order to transform city B into a bicycle city. What has to be transferred is related to the differences and similarities in context of both cities, the degree of transfer, and, the actors that are involved within the process (see paragraph 2.2). When understanding how these aspects influence the transfer, it can be determined how the transfer has to take place in order to succeed. Finally, on the basis of these findings, the transfer is expected to result in increasing cycling use in city B.

After clarifying all components within the model, we are able to answer the research question: "*In what way could a bicycle city be an example to a place that wants to increase cycling rates of all trips?*" What methods are used in order to clarify these components, leads us to the following chapter.

3. Methodology & Methods

3.1 Research approach

Qualitative methods are used to gain insight into the policy transfer process with regard to cycling. This is an appropriate approach in understanding processes and in identifying the context in which activities take place (Hennink et al., 2011). Doing so, a case study methodology was conducted. Using case study methods limits the extent to which generalisations can be made beyond the knowledge gained from the cases. However, it can contribute to general scientific knowledge because it can give new insights with regard to the policy transfer and cycling in particular. These new insights can be the basis for further research and for the development of generic knowledge on this subject (Flyvbjerg, 2001).

3.2 Selected cases

In order to examine the policy transfer concerning cycling, two cases are selected that represent City A and City B from the conceptual model (Figure 2.1).

Given the purpose of the study, the cases are selected on the following criteria:

- City A is a mature bicycle city
- City B is a city with low cycling share that desires increasing cycling use
- City A and B have significant differences in context, but; city size, and population size needs to be approximately the same

The relevance of the first two criteria speak for themselves. The third needs a brief clarification. This criterion is to emphasise the aim of this study. Namely, how can policy transfer regarding cycling take place between places with different contexts. Also, in order to achieve a reasonable outcome, the 'solid' factors concerning cycling needs to be similar in both cities.

On the basis of these criteria, city A and city B are selected: City A is Groningen, a city in the north of the Netherlands (NL), and City B is Reading, a place near London (UK). Both places are shown in Figure 3.1. Groningen and Reading are reasonable cases to focus on because of the following reasons: Whereas Groningen is considered as mature bicycle city with high cycling share, Readings' cycling share is only 2 percent of all trips (Great Britain, DFT, 2013). This contrast is beneficial in examining the factors that have to be taken into account when transferring critical success factors from city A to city B (see Flyvbjerg, 2001). Moreover, the Reading Borough Council desires increasing cycling use in the near future: "[...] in five years time, we aim to double the percentage of people cycling to work to 6% and particularly increase cycling to the town centre and other local destinations including schools and neighbourhood centres" (Reading Borough Council, 2014, p. 2). This means that both cities meet the first two criteria. In addition, the 'solid' characteristics of both cities are provided in table 3.1.

It is important to note that numbers of cycling share derived from different municipalities or regions, often refer to different measures. To illustrate, local cycling statistics of Reading only include how people travel to work. Therefore, the regional number of England is used to indicate the total cycling share of Reading in order to compare it with the total cycling share of Groningen. This number should be representative for Reading, according to the Department of Transport (Great Britain, 2015). Moreover, the municipality of Groningen often use the number of 60% of all trips (Fietsberaad, 2009; Gemeente Groningen, 2015). This number refers not to cycling share of total trips, but it refers only to the cycling share of the short, local trips.

Figure 3.1 and Table 3.1 indicate that city size are relative similar for both cities. Readings' suburbs, Earley, Lower Earley, and Woodley, are not part of the administrative boundaries of Reading but are taken into account in this study. This is because it forms one urban agglomeration. Also, both Groningen and Reading are relative flat (Google maps, 2015). Given this and the purpose of the research, Groningen and Reading are reasonable cases to focus on.

Figure 3.1: Selected cases



Table 3.1: Characteristics of both cases

Features	Groningen (NL)	Reading (UK)
Cycling share of all trips	30%	< 2%
City size	84 km	61 km
Population size	200.000	156.000

Sources Table 3.1:
 Cycling share of all trips: Fietsberaad, 2010; DfT, 2013
 City size (administrative boundaries): Google Maps, 2015
 Population size (administrative boundaries): CBS, 2015; DfT, 2013

3.3 Data collection

The data-collection includes two sections derived from the conceptual model in Figure 2.1. The first section refers to the context of city A and city B. The second section includes the investigation concerning aspects of policy transfer. The first section includes literature research, in-depth interviews and document analysis, the second section includes literature research and in-depth interviews. This will be explained in the following paragraphs.

3.3.1 Data collection I

Academic literature research is done to search for the current academic findings on factors that influence cycling. The keywords that are mainly used are: 'cycling', 'cycling use', 'factors'. The results have been carried out in the literature review and were enhanced during the entire research process.

In-depth interviews were conducted with several people who are closely related to the cycling system in City A or City B. This allowed for identifying the factors that influence cycling use in both cities, and to clarify the processes behind the relevant factors. The interviewees include people from several disciplines in order to gain information from multiple perspectives. These people include, cycling policy makers, a member of the Reading Cycling Campaign, and a researcher who is involved in several researches concerning cycling in Reading. Information could be acquired from their personal experiences within their discipline (Hennink et al., 2011). The main focus of the interviews were stimulating and constraining factors that influence cycling use in both cities. These factors concerned the spatial, psychological, socio-economical, and the political context of both cities.

The interviews were conducted in a semi-structured way. Not only because this gave structure to the interview and the sequenced analysis, but also in order to give the informants the opportunity to bring up possibly relevant issues and insights (Longhurst, 2010). The interview guides can be found in appendix A. With permission of all interviewees, the conducted interviews are recorded via digital recording. This allowed me to focus entirely on the conversation rather than focusing on taking notes (see Longhurst, 2010; Valentine, 2005). In order to prepare the data gained from the interviews, all records have been transcribed and coded. These codes can be found in the appendix. Coding is helpful to structure the data, reduce the great amount of data, and to identify new patterns and connections (Cope, 2010). In addition, information obtained in conducted interviews is used to improve the interview guide for the subsequent interview. This allows for rigorous conclusions could be made (Cope, 2010). Also, all interview guides have been adapted to the interviewee with regard to their expertise.

Complemented to these conducted interviews, document analysis was done with regard to existing policies as well as previous policies in both cities. In this way more background information could be obtained concerning the relevant issues and topics. This document analysis includes the Ministry policy documents of both cities. However, also other literature and material, that can be identified as 'grey literature' has been part of the document analysis. This includes newsletters of several cycling organisations such as the Fietsersbond (Cycling Union, NL), Fietsberaad (Cycling federation, NL) and the Reading Cycling Campaign. Also various videos regarding the history of cycling in the Netherlands (Dutch Cycling Embassy) and street videos of cycling in Groningen were used to acquire additional information about the context of both cases. These internet sources have been an encouraging source in this study, since it contributed to cover the interesting topics in the interviews and were also helpful in the interpretation of the issues and perspectives that were discussed in the conducted interviews.

On the basis of these findings, the missing factors from Reading could be identified and what factors from Groningen should be transferred. This brings us to the phase II of the data collection: clarifying the aspects of policy transfer regarding cycling.

3.3.2 Data collection II

In data collection II academic literature research is done as well. The keywords that were mainly used are: 'policy transfer' and 'transport, in order to search for current academic findings on policy transfer. The results have been carried out in the literature review.

In-depth interviews were conducted with National cycling policy consultant of the Netherlands, and traffic and international cycle expert who works for a Dutch consultancy. These Dutch cycling policy consultants are involved in several cycling projects within the UK. Therefore, they could clarify the process of policy transfer from the Netherlands to the United Kingdom. The main focus of these interviews were the several aspects of policy transfer with regard to cycling and how these aspects influences the transfer. These interviews were conducted in the same way as mentioned in data collection I.

3.3.3 Overview of conducted interviews

Although the main focus of the interviews were regard either data collection I or data collection II, some interviews have been useful for both sections. Table 3.2 provides an overview of the interviews that were conducted, with regard to what subquestions.

Table 3.2: Interviewees and subject

Name Interviewee	Function interviewee	SQ 1	SQ 2	SQ 3	SQ 4	SQ 5
C. Van der Klaauw	<ul style="list-style-type: none"> • Cycling policy-maker 1995-2008 (Municipality of Groningen) • Mobility lecturer (Hanze Hogeschool) 	x	x	x	x	
J. Valkema	<ul style="list-style-type: none"> • Cycling policy-maker 2008-present (Municipality of Groningen) 	x	x	x	x	
L. Van Hoogenhuijze	<ul style="list-style-type: none"> • Member of Reading Cycling Campaign 		x	x	x	
Dr. P. Black	<ul style="list-style-type: none"> • Urban Design Researcher (University of Reading) 			x	x	x
E. Tetteroo	<ul style="list-style-type: none"> • National policy consultant (Ministry of Infrastructure & Planning) • UK coordinator (Dutch Cycling Embassy) • Cycling consultant (APPM) 	x	x	x	x	x
W. Van der Wijk	<ul style="list-style-type: none"> • International cycling expert (Royal Haskoning DHV) • Overall traffic expert 	x	x	x	x	x

3.4 Data analysis

The transcriptions were coded on the basis of a coding scheme (see Appendix B). This coding scheme consists of key words with regard to the sub questions. The several sections with similar codes have been categorised in order to get a comprehensive overview of perspectives. These perspectives are linked to the documents that were analysed. The next chapter outlines the main findings of all data collected.

4. Results

4.1 *Bicycle city characteristics*

In order to clarify the term 'Bicycle city' this paragraph outlines several perspectives on the aspects of a bicycle city. These perspectives are derived from the Dutch Cycling Union (*in Dutch: Fietsersbond*) and all Dutch experts that have been interviewed.

4.1.1 *Determination of a 'Bicycle city'*

Originally, The Dutch Cycling Union used the term 'Bicycle city' to stimulate competition between various cities with regard to their cycling conditions. Both existing literature and the Cycling Union do not apply a strict definition of bicycle city. Briefly, they refer to the winners of the annual Bicycle City election of the year, in which every year a Dutch city is selected. In this way these cities are being rewarded for their cycling policies conducted in previous years. The directives for becoming a bicycle city include three factors; making the cyclists feel comfortable on the roads; ambition; and ambition. Ambition is taken into account twice because the Cycling Union regards ambition as very important. On the one hand, refers ambition to the ambition within the mindset of municipalities, and, on the other hand, it refers to the conversion of this ambition into concrete actions.

4.1.2 *Benefits of being a Bicycle city*

According to international cycling expert Van der Wijk, the value of becoming a bicycle cities lies in the aspect of the positive aura concerning cycling. Particularly in the Netherlands, cycling is associated with positive concepts rather than negative one; think of sustainability, environmental friendly, health, liveable cities and so on. Cities want to be associated with these terms in order to be placed in a good light. This issue can also be observed within Groningen's policy mindset. In their current Cycling Strategy (Gemeente Groningen, 2015) it is explicitly stated that the reason why their city is very liveable and pleasant to be in, is mainly because of the high cycling share of all trips. Implicitly, as Van der Wijk states, they want to sell their strategy abroad, claiming that if other cities desire to increase their cycling rates they have to take Groningen as example rather than the Dutch capital Amsterdam. According to the current cycling policymaker of Groningen, several councils of the UK prefer visiting Groningen to gain knowledge on this subject rather than visiting other Dutch cities. This seems logical, as international cycling expert states; places that are searching for examples regarding cycling, should analyse cities from the same size. In this sense reasonable comparisons can be made. Therefore, Amsterdam is not a good example for cities with lower population, just like Reading and Groningen. This statement confirms the importance of criterion 3 from the Methodology (see paragraph 3.2).

4.1.3 *'Bicycle city' in different contexts*

Yet, it is important to consider the difference when speaking of a bicycle city with regard to the Dutch context or international context. This difference lies in the fact that the Netherlands leads the way in cycling rates, in contrast with other countries (Dutch Cycling Embassy, 2015). In this respect, when talking about bicycle cities in the Netherlands we can assume that these cities have a cycling share that is approximately 40% of the modal split, or even more. Previous cycling policy maker of Groningen, states that a city is a bicycle city when bicycle facilities are considered as sufficient by the population. In addition, more than half of the population considers cycling as main travel mode within their bicycle city. In terms of the utility theory, it is generally more convenient to travel by bike than by car in Dutch bicycle cities. On the other hand, in terms of bicycle cities within the UK, the UK coordinator of the Dutch Cycling Embassy, would rather refer to cities where cycling is a relative common travel mode. Previous cycling policymaker of Groningen agrees with this and states that the modal split in these cities should consist of approximately 5% cycling.

4.1.4 *Conclusion*

Based on this, we conclude that bicycle cities are cities with frequent bicycle facilities, infrastructure and bicycle users, in such a way that any road user is familiar with cyclists on the road.

4.2 Context factors influencing cycling use in Groningen and Reading

To date Groningen is a mature bicycle city, this has not always been the case. This section firstly clarifies the development of Groningen becoming a bicycle city. Secondly, this paragraph outlines the recent development of Reading concerning cycling. Hereafter, the constraining and stimulating factors that have influenced cycling use in both cities are summarised.

4.2.1 Development of 'Bicycle city Groningen'

Groningen has been an important regional centre for a very long time. Daily activities, such as work, living, and leisure activities have always taken place in the city core. Around 1950s, travelling by bicycle was common part of every days life in Groningen. Around 1960s this drastically changed: car use increased rapidly, and cycling and public transport use dropped (Fietsberaad, 2009). During that time was travelling by car related to status, and affected cycling use negatively. Cycling was considered as a poor transport mode, in contrast with driving a car. Also, cycling became more dangerous in Groningen; there were many cars on the road, and, cycling facilities barely existed. The municipality mainly focused on car policies rather than cycling policies. The first design of the Traffic Circulation Plan was mainly in favour of car use (Fietsberaad, 2009). This plan aimed to create many road space for the car in the inner city. However, due to resistance of the public, the municipality changed their mindset and realised the inner city needs to become, as previous cycling policymaker put it, the 'living room' of Groningen. The aim was to achieve a liveable city, where less cars are desired, and where is much space for walking and cycling. Consequently, cycling facilities were taken into account in the eventual Traffic Circulation Plan. From then on, cycling became gradually part of the political agenda. For example, oneway traffic measures were done, in order to support fast cycling networks. Also several bicycle paths were implemented. This was the beginning of the expansion of bicycle infrastructure in Groningen. In 1866, the first Cycling Strategy was born and according to Van der Klaauw it was the first integral cycling plan within the traffic and transport system in the Netherlands. From then onwards cycling rates were steadily growing.

Along these increasing rates, safety issues occur. The main problem was often; too little space for too many road users. Many cyclists used the roads, next to many cars and buses. Therefore, around 1995, the municipality decided to focus again on cycling policy. Facilitations were implemented step by step in order to improve safety issues. According Van der Klaauw, cycling policymaker during that time, this was done in line with the aim of building a good cycle network spread over the whole city: *"We started of course with implementing the most easy measures, that were relatively cheap"*. This was done by seeking for new links within the network in order to reduce congested 'cycle' roads. The implementations that were done, include; providing cycle lanes and cycle paths where possible. Often, cycling safety issues were solved by separating the cyclists from other travel modes on the road. Also, separate traffic lights for cyclists were implemented. This has been a significant factor in increasing the safety for cyclists, according Van der Klaauw. Eventually, after these implementations cycling rates increased and not merely poor people or people who were really conscious of environmental issues cycled in Groningen, but anyone; poor, rich, young, old, female, male. Therefore not only infrastructure facilities were necessary, but also cycling facilities, such as parking places. Groningen has built a huge underground parking area for bicycles at the railway station: Het Stadsbalkon (City Balcony). This garage has up to 10.000 parking places for bikes. Many commuters and students travel everyday by train towards Groningen and continue their journey by bus or by bicycle.

Along these mobility policies including implementing bicycle facilities, Groningen has applied an integral approach of spatial planning. This includes strict spatial planning to prevent a scattered built environment and great expansion of the city (Fietsberaad, 2009). Therefore, as mentioned above, daily activities within Groningen has always taken place in a relative small area. All important hubs in the city centre are close to each other, within a range of 5 km. Figure 4.2 illustrates this by showing the location of the important hubs; the University of Groningen, the railway station, and the hospital.

Currently, not only do 78% of all inhabitants live within a range of 3 kilometer in the city center, also 90% of all employment takes place in the city core (Fietsberaad, 2009). This has been beneficial to cycling use, since short trips are more 'bikeable' than longer trips.

With regard to the above mentioned aspects of the development of Groningen regarding cycling, a visual overview of this development is provided in Figure 4.2.1. As shown, the development of the built environment, has been compact. The inner circle refer to 3 km, and the outer circle 5 km. Also, Figure 4.2.1 clarifies that main roads for cars and busses have been transformed over the last decades. The municipality of Groningen have opted for a city where car use is not encouraged. The city is not very car-friendly in terms of the several aspects of the utility theory; parking prices are high and there are many small, one-way traffic roads with low maximum speed. Current road infrastructure can be characterised as coarse-grained, as such that all cars are concentrated on a small amount of roads. With regard to cycling, it is obvious from Figure 4.2.1 that around 1960s, Groningen had very little infrastructure for cycling. This has been expanded ever since. The figure of cycling infrastructure in 2000, is representative for the contemporary cycling infrastructure (2015). Currently, the cycling infrastructure is extremely fine-grained and forms a large cycle network. The network consists of many separate cycling paths, cycle bridges and cycling lanes on roads. Also, cyclists are aloud to use one way traffic roads for cars, in both ways.

The combination of being a compact city, being not a very car-friendly city, and being a very bicycle-friendly city, have led to high cycling rates in Groningen. The following statement of current cycling policymaker illustrates this: *"People often ask me what the main reason is why people cycle. You can give any reason for this; it's good for health, and all kind of reasons are true. But, the most people don't rely on that: 'Why are you going on your bike? It's just the quickest way to travel.' Time is money, you opt for the easiest way, and that, is cycling"*. This means that with regard to the theory, the built environment, and, remaining variables are currently the main important variables in determining why cycling rates are very high in Groningen, rather than psychological and socio-economic variables. In terms of time, costs, and effort, the characteristics of Groningen result into that cycling is the best travel mode: short distances between activities, requires not much effort for cycling, and, long travel times for car journeys, because of car-unfriendly roads, makes travelling by bicycle more tempting. In combination with characteristics of the built environment, applying utility theory is useful in understanding why people cycle in Groningen. Conducted policies reveal how most of these aspects of the built environment are established. Therefore, the way these policies are established have played a significant role in heightened cycling rates. Due to all these cycling-friendly characteristics, Groningen was elected as Dutch Bicycle city of 2002. Groningen fulfilled both the condition of making the cyclists feel comfortable on the roads, and, the condition of ambitious cycling policies.

After this period, the focus of cycling on the political agenda slightly faded away. Although cycling was part of the agenda, the main focus moved towards public transport and car use. However, this year, cycling has become of interest again. To date, Groningens' population size is 200.000 inhabitants, with an expected increase of 25.000 people within the next decade (Gemeente Groningen, 2015). The city becomes more crowded with less space available. Therefore, a new cycling strategy has been established recently, in order to remain the city liveable and pleasant to be in. The new cycling strategy focusses on Groningen as icon for 'The Bicycle City' of the Netherlands. Inhabitants were closely involved in the establishing of this cycling strategy. This is in contrast with previous cycling policies in Groningen, in which the population were not involved in the policy-making process. According to Van der Klaauw, many people were against the implementation of the Traffic Circulation Plan, however, the municipality kept the record and implemented it anyway. Currently, the municipality respond to the times of the civil society participation. The current cycling strategy is the outcome of inputs from inhabitants and many other disciplines. Inhabitants, researchers, companies and policy-makers are all asked to come up with ideas and issues they find relevant to be solved. The municipality of Groningen opted for this bottom-up approach to accomplish a plan that is supported by the population. Creating a wide support by using a positive approach is the prime driver of this cycling strategy according to current cycling policymaker Valkema. He states: *"You can achieve and get much more done by sending a positive message."* For example, you can consider the crowded Stadsbalkon in a negative way: there is way too little space for bicycles. Or in a positive way: 'If all these bicycles were cars, we would have needed much more space'. Using this positive approach the municipality of Groningen wants to sell their 'cycling environment' (inter)nationally. They argue that it entails significant economy growth.



Figure 4.2.1: Main hubs in Groningen

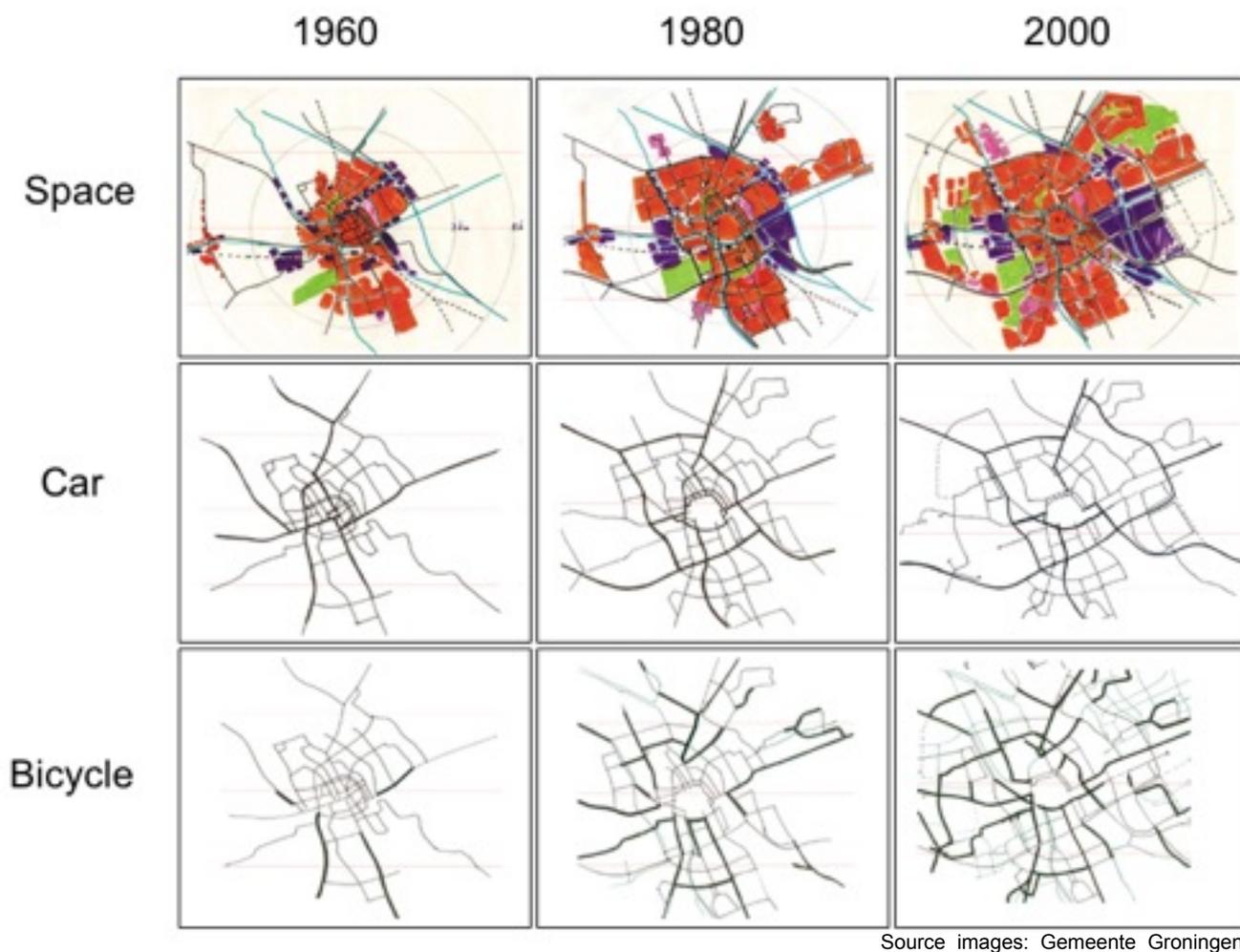


Figure 4.2.2: Development of Groningen: space, car infrastructure and bicycle infrastructure

Since 1960s onwards, cycling has been consistently part of the policy agenda of Groningen. This reflects into the built environment in which cycling is considered as a comfortable transport mode. The main constraints Groningen had to deal with during the development of becoming a bicycle city are summarised in table. Also, the stimulating are provided.

4.2.2 Recent developments of cycling in Reading

In contrast with the previous paragraph, this paragraph discusses only the recent developments of Reading concerning cycling. The reason for this is that according to the Dutch cycle experts, many foreign places, including Reading, are in the phase in which Groningen was during the 1970s. In this phase, cycling policies, facilities and a comprehensive network barely exist in the area concerned. How this applies to Reading will be further examined in this paragraph.

Reading is a compact town in England with 155.000 inhabitants. The town is dense with mixed-use and all hubs are placed in a range of 5 km. The main hubs are, the University campus, Hospital and Railway station and are shown in Figure 4.2.3.

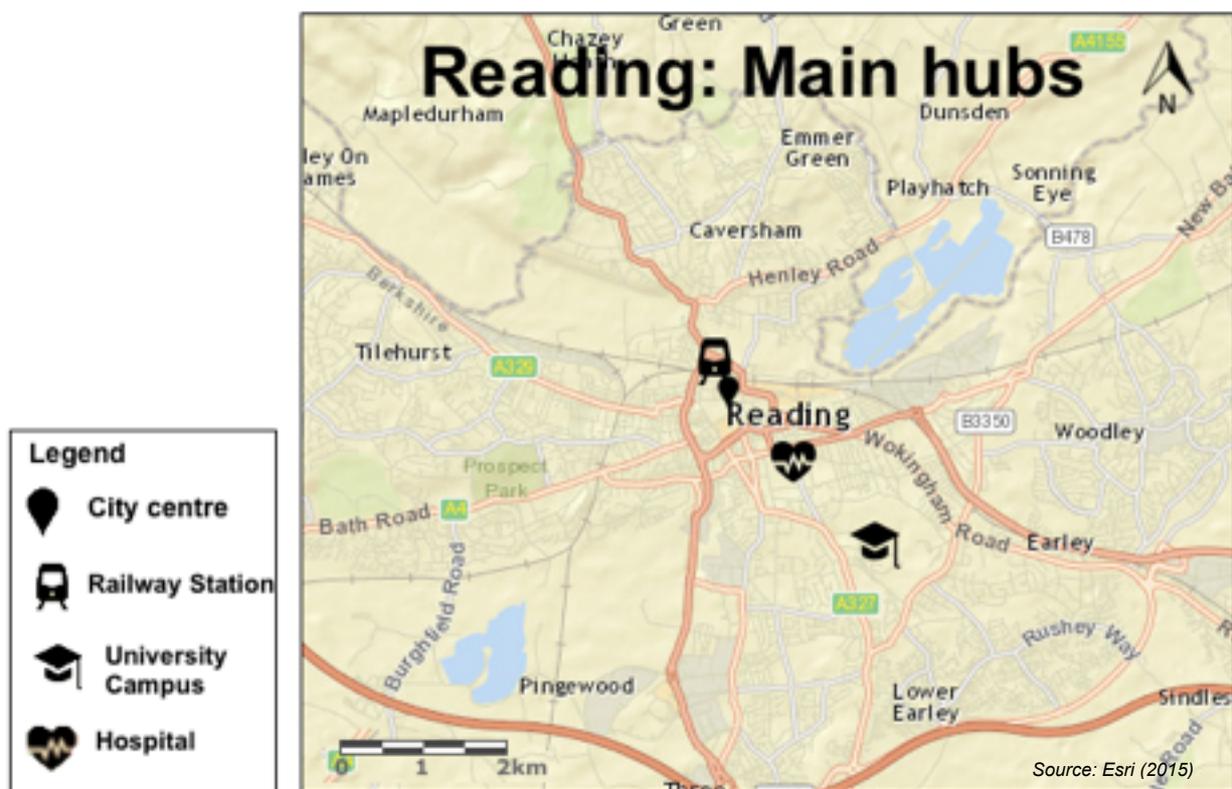


Figure 4.2.3: Main hubs in Reading

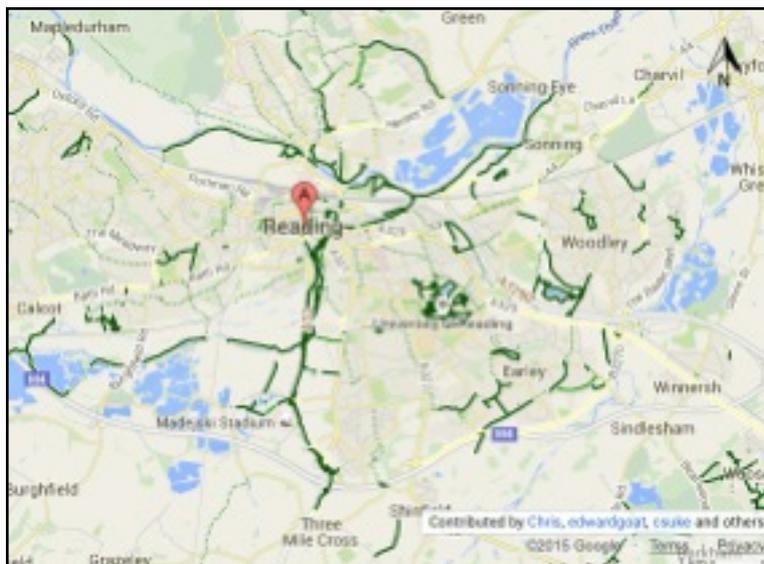
Reading is not very hilly which is positive for cycling, since less effort is required when cycling in comparison with cycling in hilly towns. Reading has great connectivity, as well in terms of motorways as train rails. Reading is an important hub in the region; all trains from many parts of the UK passes Reading, before heading to London. Many people travel everyday towards and from the station. Readings' investment climate is very good: Reading has been identified as one of the leading places for Foreign Direct Investment (Reading UK CIC, 2015).

Reading Boroughs council states that Reading is a town with good public transport, good car facilities as well as walk and cycling facilities (Reading Borough Council, 2011). Their current ambition with regard to cycling is formulated as follows: "Our ambition is to create a culture where cycling is a safe, attractive and a normal travel choice" (Reading Borough Council, 2014, p. 2). Readings' Borough council been stated this for years, according Urban Design researcher of University of Reading, who is involved in several cycling researches about Reading. In recent Cycling Strategy of Reading it is stated that Reading aims to increase their cycling rates up to 10%

of all trips by 2025 (Reading Borough Council, 2014). Reasons for this include ‘[...] *contributing to improved air quality, reduced noise pollution, healthier lives and less congestion*’ (p.2). They seem to follow the overall goals of the national government, that cycling contributes to economic growth, cutting carbon emissions and improving health (DfF, 2011). Accordingly, there has been several implementations done for cycling. Among these are visible cycling measures, such as a Bike Hire scheme, as well as much cycling campaigning has been done in recent years. The Bike Hire scheme is implemented in 2014 and is a bike hire system across the area of Reading. These bikes are easily accessible to hire, and are spread at 29 dock stations (see for exact locations appendix C.1). On the other hand, the cycling campaigning that has been done is very extensive. Example of these ‘soft measures’ include, much information with ins and outs of cycling in Reading on their website; maps of cycle networks, explanations of cycle signs, and bikeability trainings are given, since it is not as common that British people can cycle in comparison with native Dutch people.

On the basis of what is mentioned above, it seems that Reading’s cycling facilities are good. However, in-depth research reveal the contradictory. To illustrate, the council provides many road maps (see for example Appendix C.2) that suggest existing ‘cycling networks’ to cycle on. However, the Reading Cycling Campaign claims that, in reality these networks do not actually exist. This can also be seen in Figure 4.2.4. Transport Urban Design researcher states: *“I think the truth is, I could talk all day about how rubbish Reading is for cycling, which is not very good”*. In contrast with the cycle network in Groningen, existing cycle lanes in Reading are not connected. Roads where maximum speed is high are often suggested as as bicycle lanes; and there are almost no cycling lanes that are separated from other road users, such as cars and busses. Since Reading is very compact with small streets and dense there is less space to built a cycle network that consist of separated cycle lanes.

Figure 4.2.4: *Cycle roads in Reading* Source: Google maps (2015)



In addition, Cycling Strategies of Reading and the elaborated information that the council provides on cycling in Reading, give the impression that Reading’s council is fully on board with trying to achieve higher cycling rates. Also, this is in contradictory with the information gained from the conducted interviews. For example, the council involves the inhabitants in cycling policymaking. Meetings with Reading’s Cycling Campaign are organised in order to be aware of certain cycling issues in Reading. However, that is where it stops. The Member of Cycling Campaign claims that often these conversations are not turned into actions to solve any issues that are mentioned by the population. Also, the little bits of implementations that have been done occasionally, are not a coherent set of implementations. Black states that these incoherent implementations are done for a long time, and the outcome is almost zero. This seems to be true for the Bike Hire scheme as

well. It appeared to be mainly used by people who are afraid to lose their own bike by theft, or students that are avoiding taxi costs when going out in town.

Researcher Black is of the opinion that behind closed doors the council do not really consider cycling as a real option within the traffic and transport system. This will be illustrated by two examples. On the one hand, Black argues that the cycling measures that has been implemented are likely part of another goal of the council. Namely, becoming a city. Reading is in terms of administrative grounds, currently a town. The council has applied to become a city, but are rejected. Other towns that have become cities in administrative terms, do have cycle hire schemes and other bicycle facilities such as parking places near the station. It seems that Reading is following their strategy and using the Bike Hire Scheme in order to apply for becoming a city. On the other hand, in terms of sustainability goals, it seems that the council considers the bus system as most important travel mode rather than cycling. The bus system makes the government money, whereas they are of the opinion that cycling on only costs money.

Recently, a survey with regard to cycling is conducted among the population of Reading (Reading Borough Council, 2014a). The results reveal that the implementations done in Reading are not encouraging the majority of the people in Reading to cycle. The majority of Reading's population consider cycling in Reading as unsafe. From the information gained from the interviews, it appears that people in Reading are not common with cyclists on the road. In the Netherlands, a person who travels mainly by car, knows what is like to travel by bike, as cycling skills are more common in the Netherlands. Therefore the car driver can anticipate much easier on cyclists on the road than car drivers in Reading. This, in combination with lack of separated cycle paths and cycle lanes, cycling in Reading is considered as unsafe. This is one of the main reasons why, despite of the implementations that have been done, cycling rate of all trips is still less than 2% (DfT, 2013). However, the majority of the people would like to cycle more. In which, more than half of the people that do not cycle are among them. The majority desire separated cycle lanes, and above all safer conditions. Therefore, it is likely that if cycling facilities are upgraded, in order to create safer conditions in Reading, cycling rates will increase.

Whereas Valkema states that people in Groningen only cycle from A to B because it's the easiest, shortest way. Transport Urban Designer found out that the people who cycle in Reading, prefer the way which is more pleasant to cycle, such as ways through parks and streets that are considered as pleasant, even if this means that the way becomes longer. If you want to upgrade the area in Reading to the satisfaction of this group, it is more important to look at the personal values rather than the utility theory.

Also, researcher Black found out that people who do cycle in Reading, are mainly cycling towards and from the railway station. However, this place is very dangerous: "*The busses, the longway system, the lack of confusion, the confusion that exist to even get into the station itself. It's not good. There is a join garage way it comes in. It's very, very unsafe place for cyclists*" according Black. Some visual cycling implementations has been implemented near the station, such as a few parking places and cycle lanes. This is done without changing the existing situation which was already very busy. The cycle lanes indicates that it is 'safe', which is not, and therefore it makes it even more dangerous.

From the development of Reading and Groningen an overview of constraining and stimulating factors that has influence cycling in Groningen and Reading, is made and is provided in appendix D. This table forms the basis for the following paragraph: the policy transfer process.

4.3 Policy Transfer

On the basis of the previous paragraph, this paragraph examines what the missing factors are in Reading concerning cycling, and, what Groningen has done differently from which Reading can draw lessons. The outcome the transferrable that has to take place from Groningen to Reading in order to let cycling rates rise in Reading. Hereafter, it is discussed how context differences, actors and degrees of transfer, influence the transfer.

4.3.1 Transfer object

Reading and Groningen are both compact and dense cities, with short distances between activities. Therefore distances between activities are bikeable, which is on the basis of why people cycle or not. As mentioned in the previous paragraph, Reading has done several implementations in favour of making cyclists more comfortable on the road. Examples include, separate traffic lights, reducing traffic speed on roads, cycling lanes. These implementations are similar to the ones that have been implemented in Groningen. However, whereas Groningen provides bicycle facilities and extensive cycling infrastructure over the entire area of the city, Reading, has only a few bicycle facilities in the city, which are incoherent and not connected. The reason for this difference is derived from differences between the planning processes and ideologies within Groningen and Reading.

Political will

Cycling has become a consistent part within the Dutch traffic and transport system. This has occurred over time since cycling has been part of the Dutch culture for a very long time. This is in contrast with Great Britain, where cycling is not part of their culture. Having the aim of providing the population the option to cycle in a safe and comfortable way, the municipality of Groningen has cycling taken into account in every new strategy and project within transport system, since the 1970s. The political will to provide cycling as a safe and comfortable option to travel reflects into built environment that includes comprehensive infrastructure network within Groningen. In contrast, Reading seem to lack of this political will and is not taking cycling into account as consistent part of every transport scheme. This results into incoherent, scattered implementations. Therefore, cycling is not considered as a safe and comfortable mode option in Reading.

Long-term strategy

Whereas cycling in Reading is considered as unsafe, Groningen had to deal with cycling safety issues as well in the last decennia. However, the Municipality of Groningen has solved this in accordance with a long-term strategy. Following this strategy, they searched for new links within the cycle network in order to reduce the congested cycling roads. This has been done step by step by commencing with the cheapest and easiest implementations.

Solving safety problems

In order to know how these implementations should look like you have to start by looking what the reasons are for (not to) cycle in that certain area, according traffic expert Van der Wijk. As mentioned, people do not cycle in Reading mainly because of safety reasons. Groningen has had these issues as well and by searching for new links within the cycle network they solved these problems.

Rigorous choices

In addition, Groningen has made rigorous choices with regard to the traffic and transport system. They have opt for, on the one hand, a walk and cycling friendly city centre, and, on the other hand, they choose to concentrate cars on a few roads. International cycling expert claims that this is beneficial, as when you put your focus on all travel modes at the same time in a particular area, this will not result into optimal result. To illustrate, the cycling measures that has been done in Reading, such as providing cycling lanes on the roads are added on existing busy roads.

Support

Also, Groningen and Reading move both with times, as they involve the population in their cycling policy planning process. However, whereas Groningen seems to take the perspectives of the population into account in their policies, it seems that Reading does not do that. This result into negative approach towards the cycling implementations that are done. According to current policy maker of Groningen getting support is an influential factor in making cycling more popular. Applying a positive approach is essential in this.

All cycling experts are in the opinion of that cycling has to be seen as something complementary to other traffic modes in Reading. Cycling implementations should not be a dramatic replacement for car lanes, in order to prevent insurgency from the population,. Therefore the transferrable what could be implemented in Reading is that in Groningen next to cycling, driving

Now it is clear what the missing factors are and what Reading can learn from Groningen, the following paragraph discusses what have to be taken into account within the transfer.

4.3.2 Context differences and policy transfer

With regard to the different degrees of transfer, all cycling experts agree on the fact that transferring critical success factors concerning cycling, is not a matter of copy and paste. International cycling expert, states that if you want to anticipate on contextual differences, you have to experience the context by going there. It is necessary to gain much information that can be useful in the design process by talking to several institutions, inhabitants and companies in the certain area. An important difference between contexts is for example the existing national policies in both countries. International cycling expert Van der Wijk, states that the national government in the UK provides relative strict design standards. These strict standards include for example particular sizes of cycle lanes. In contrast provides the national government in the Netherlands, a more overall guideline for cycling on a local level, according Tetteroo. The Dutch government is more flexible with these directives because Dutch urban designers are familiar with involving cycling in any transportation plan: *“There is no Dutch designer who doesn’t take cycling issues into account within the designing process. In contrast, British designers who do take cycling into account, are very hard to find”*, states Van der Wijk. Not only policymakers have to adapt to the transferrable, but designers too. To this respect it is important to take into account what actors are involved within the transfer.

The transfer starts within the council of Reading, as they determine what policies are conducted. Therefore it is important to understand the mindset of the Reading Borough council thoroughly, in order to determine in what way the several aspects of the planning process of Groningen can be adopted. The political will is for example more complex to transfer, than for example the idea of getting support behind cycling policies.

With regard to the content of policies Van der Wijk states that the main key in this is to seek for the relevant aspects of implementations: *“The red colour is not important [dutch cycling lanes]; it is important that the car-driver is aware of a cyclist on the road”*. Thus, the goal of these red dyed cycling lanes is that the car-driver pays attention to any cyclists on the road. Initially, the overall goals of certain implementations are interesting to transfer, rather than the specific design. When is determined what ideas and goals can be transferred, the next step is customisation. According cycling policymaker Valkema, this might result into ‘copying’ a similar implementation, but might need a little extra to function properly.

Concerning Reading, the transferrable includes mainly aspects of the planning process and ideologies of Groningen. How Reading should apply this transfer will be discussed in the following paragraph.

4.4 Advice to Reading

When Reading adopt the transferrable outlined in paragraph 4.3.1., it is likely that cycling rates will increase. However, to what extent this transfer has to take place is for some aspects more clear than others. This paragraph gives advice to Reading on the basis of what became clear concerning the transfer within this research.

All experts are of the opinion that complementary to running campaigns, it is necessary to built a cycling infrastructure, that is safe and complete. Black argue: *“They need the infrastructure, but to get the infrastructure they need a council who are fully behind it”*. Although, cycling has been part of Groningens’ policies for a long time, in times when cycling policy was not in the bigger picture, a municipality who was really pro cycling, ensured to make big steps forward. Particularly, in the beginning of integrating cycling into the traffic and transport system, a municipality that is pro cycling is necessary to start in order to get the mindset that really supports cycling.

When Readings' Bourough council has a significant ambition to increase cycling, as well as in policies as in reality they need to focus on a long-term strategy. The content of this long-term strategy has to be concrete and crystal clear. What this content needs to contain in order to be successful, Van der Wijk states: *'You have to find the most promising way to get there; infrastructure is one of the prime drivers, for sure.'* The infrastructure needs to be implemented first in the area that is most likely to be going used by cyclists. Tetteroo states that you have to start with focussing on a particular area and on one potential group that would cycle. When you create the best circumstances for this group in this area, it is likely they will cycle in this area. From here the phenomenon of cycling becomes more common, and other people start to cycle too, which results in safer cycling conditions.

However, Black would rather go for an approach in which you not focus on a small area, but on the entire city: *"Why test the waters on one particular site? [...] what if it fails in one particular area, would that mean it should be scrapped?"* When this plan fails in this area, this could ruin the entire goal. However, Van der Wijk states that you can start in a small, particular area, but you have to make sure that it is undoubtedly possible to fail. Given money and time constraints, it is reasonable to agree with this latter statement. After you have done in-depth research in what kind of people would be likely to cycle in a certain area, a pilot could be done that is unlikely to fail. Accordingly, the Reading council needs to seek for a potential group that is likely to be using cycling infrastructure in Reading, and seek for what types of movements within Reading are likely to be done by bicycle. This group could be the students from Reading University. The campus is not really in the city centre, but on the edge. Students live in several parts of the city and could travel to campus by bike, or to the railway station by bike. According international cycling expert, students are relative easy to influence, and are openminded to innovative changes, in comparison with elder people.

Nevertheless, Van der Wijk is in the opinion that good infrastructure is characterised by that the whole journey, from A to Z is good: from the moment you step out of your door to grab your bike to the moment you park your bike when arrived at the destination. Therefore it is necessary to have a clear long-term strategy in which it is clear that the network will eventually be completed.

Groningen has opted for radical choices concerning their traffic and transport system. Reading could learn from this in such a way that they have to make decisions when designing roads. Van der Wijk states that in the process of designing a road, you have to focus on one particular travel mode. After you have created the best possible situation for this mode you can look for the next one and so on. *'So when they opt for the bus, it is not useful to create a half insufficient cycle lane next to it'*. You have to do all things properly, or it makes no sense. By this end you create an orderly road which is pleasant for traffic users.

When you decide to implement your bicycle network on the main routes which are often very busy, you have to do many expensive implementations the entire route. The missing links within the bicycle network could be fulfilled by searching for quite roads and parks when commencing with bicycle network. These roads are probably the most easy and cheap to make some adjustments: *'In this way there are only a few conflicts with other traffic, therefore you can put your entire focus on these, as well as attention and money, in order to make it really good'*, according Van der Wijk.

Eventually, integrating cycling within the traffic and transport system still remains a process of trial and error. However, the cycling experts claim that, because of the transfer, the whole process of increasing cycling rates may go significant faster in comparison if you had to begin from scratch.

5. Conclusion & Discussion

5.1 Conclusion

Bicycle city Groningen is a city with frequent bicycle facilities, infrastructure and bicycle users, in such a way that any road user is familiar with cyclists on the road. Groningen has got the ambition concerning cycling; both within policies and regarding concrete actions. In contrast, Reading has a few bicycle facilities, little bicycle infrastructure and less bicycle users. Only implementing a good cycling infrastructure will not ensure cycling increase. In order to increase cycling rates it is necessary to look at both the planning process and the policy content, since the planning process is considered as equally important as the implementation process. Therefore Reading can learn from on the one hand the planning process of Groningen, and, on the other hand from the implementations that are done.

It seems that Reading have the cycling ambition on paper, but they lack of ambition in concrete, coherent implementations that are part of a long-term strategy. Therefore aspects within the planning process of Groningen could be transferred towards Reading. Examples include, a long-term strategy and implementing bicycle facilities systematically and in line with an overarching goal. However, what lies on the basis to achieve this is the significant political will to increase cycling rates. How this can be achieved is still unclear. Nevertheless, it is clear how Reading can learn from the implementations Groningen has done in order to solve safety issues concerning cycling. They can learn from these implementations by looking for the overarching goals of implementations what should be transferred, rather than specific details. The specific details are often determined on basis of the socio-economic variables and psychological variables.

In terms of the theory about policy transfer, the degree of the transfer would be 'emulation', 'the combination', or 'inspiration', rather than 'copying'. Copying elements from the cycle system is not likely when transferring critical success factors. This is in accordance with the theory derived from Rose (1991) about policy transfer in general.

In a wider perspective we conclude that a bicycle city could be a certain example to a place that wants to increase cycling rates of all trips. In particular, it is clear how the policy content can be considered as example. This should be done by looking for the overarching goals of these implementations rather than focussing on specific elements. This is in line with the theory of policy transfer, that states that the focus needs to be on the generic rather on the specific (Rose, 1993). Therefore, it is likely that these existing findings on policy transfer apply also for policy transfer with regard to cycling. Moreover, just like the theory argues, bounded rationality influence the outcome of policy transfer concerning cycling as well. Implementing ideas from the borrower remains a process of trial and error in which the outcomes cannot always be predicted beforehand.

5.2 Discussion

During the process of selecting cases, the results of document analysis pointed out that the Reading Borough Council was aspired to increase cycling use. However, during the in-depth analysis of Reading it appeared not to be entirely right. Therefore the research turned another direction than expected. From the characteristics of what is considered as bicycle city, and from Groningen in particular, it became obvious that the ambition within the policy is prime driver for increasing cycling rates. This ambition reflects into the whole planning process and all implementations. Therefore it is necessary to Reading to seek for this political will. Further research should find out, how this political will could be achieved. Also a suggestion for further research would be to investigate how this political will could be turned into actions according a long-term plan.

Although, this research has found out that Readings' Bourough Council lacks the essential political will to increase cycling rate, it is necessary to do in-depth research to what extent the Readings Bourough council desires to increase cycling rates. Within the given time for this research it was not possible to conduct an interview with the Transport Management of the Reading Borough Council. Therefore their ideologies could merely be investigated by analysing policy documents, rather than analysing the broader perspectives behind these documents. Interesting would be to investigate what exactly underpins the mindset of a policy to integrate cycling into their system. As

mentioned in the introduction, integrating cycling into the traffic and transport system lies often on the basis of sustainability goals and congestion issues. However, in the case of Reading it seems that this reason is given, but does not correspond with the real reason. To what extent this happens more often with regard to cycling is an interesting question to investigate in order to get more insight in politics.

Moreover, it is difficult to distinguish the factors that influence cycling use. Cycling use rates are on the grounds of a great amount of factors. Although the theory provides several categories, these categories interact and some factors overlap within each category. Therefore it is difficult to provide an overview that explicitly illustrates what are on the one hand, constraining factors, and, on the other hand, stimulating factors that influence cycling use.

Since both policy transfer and cycling are complex subjects, a suggestion for further research would be to focus on specific aspects within these subjects. For example, a research could focus on either the planning process with regard to cycling and policy transfer. This allows for more in-depth conclusions on how aspects from the planning process should be transferred.

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Appendix A: Interview guides

Before I started the interviews I have asked permission to all interviewees to record the interview. In addition I have asked if they would mind if I cite any sentences they have said during the interview. All gave permission to both recording, and citing.

Data Collection 1

Interview 1: Policy Consultant in the municipality of Groningen from 1995-2008

Name: C. van der Klaauw
Location: Café De beurs - Groningen
Date: 4-05-2015

Topics Opening Questions

- Work activities
 - Municipality of Groningen
 - In what way have you been involved in the development of 'Bicycle City' Groningen?

Topic subquestion 1:

- Definition of bicycle city

Topic subquestion 2:

- Critical success factors of Groningen
- Restraints?

Topics subquestion 3:

- Establishment of cycling policies
- Errors? Failures?
- Solutions?

Topics subquestion 4:

- Delegations from abroad
- -> copying, emulation, mixture or inspiration
- What can international institutions learn from Groningen??

Interview 2: Policy Consultant in the municipality of Groningen from 2008 - present

Name: J. Valkema
Location: Municipality of Groningen, Economic business and Spatial Planning department
Date: 12-05-2015

Topics Opening Questions

- Work activities
 - Municipality of Groningen
 - New cycling Strategy

Topic subquestion 1:

- Definition of bicycle city

Topic subquestion 2:

- Critical success factors of Groningen
- Restraints?

Topics subquestion 3:

- Establishment of cycling policies
- Errors? Failures?
- Solutions?

Topics subquestion 4:

- Delegations from abroad
- -> copying, emulation, mixture or inspiration
- What can international institutions learn from Groningen??

Interview 3: Member of Reading Cycling Campaign

Name: L. Van Hoogenhuijze

Skype session

Date: 25-04-2015

Topics Opening Questions

- Reading Cycling Campaign work activities

Topic subquestion 2:

- Key restraint factors in Reading

Topic subquestion 2:

- Distinction between context-specific and general factors that influence cycling behaviour

Topics subquestion 3:

- Cycling policies
- To what extent related to the Reading Borough Council
- To what extent is the population involved

Topics subquestion 5:

- Chances / Opportunities

Interview 4: Urban Design Researcher in the Transport and Planning Department at Reading University

Name: P. Black

Skype session

Date: 15-05-2015

Topics Opening Questions

- Work activities
 - What are both researches about?

Topic subquestion 2:

- Restraints in Reading
 - Policy system
 - Built environment
 - Culture
- Success factors?

Topics subquestion 3:

- Existing policies
- What is your relation with the Transport department of Reading Borough council?
- To what extent can you influence the policies?

Topics subquestion 5:

- Opportunities & Strengths
- Focus on limited area, or widespread?
- Focus on particular group?

Data Collection 2

Interview 5: Policy Consultant at the Ministry of Infrastructure & Environment

Name: E. Tetteroo

Location: Ministry of Infrastructure & Environment - The Hague

Date: 21-04-2015

Topics Opening Questions

- Work activities
 - Cycling Policy Consultant
 - Dutch Cycling Embassy
 - Consultant at APPM

Topic subquestion 1:

- Definition of bicycle city

Topic subquestion 2:

- Distinction between context-specific and general factors that influence cycling behaviour

Topics subquestion 3:

- Establishment of cycling policies
- What are the factors that influence cycling use that are mainly taken into account when establishing cycling policies?

Topics subquestion 4:

- Experiences of policy transfer within the Dutch Cycling Embassy
- In what way is context of the 'borrower' and 'lender' taken into account?
- Differences in planning approach regarding cycling between NL & UK

Interview 6: Traffic & International Cycle Expert - Royal Haskoning DHV

Name: W. Van der Wijk

Location: Royal Haskoning DHV - Zwolle

Date: 22-05-2015

Topics Opening Questions

- Work activities
 - Cycling expert
 - Projects within the UK

Topic subquestion 1:

- Definition of bicycle city

Topic subquestion 2:

- Stimulating and constraining factors influencing cycling use within Groningen and Reading

Topics subquestion 3:

- Establishment of cycling policies
- What are the factors that influence cycling use that are mainly taken into account when designing a cycle policy

Topics subquestion 4:

- Experiences concerning policy transfer
- In what way is context of the 'borrower' and 'lender' taken into account?
- Differences in planning approach regarding cycling between NL & UK

Appendix B: Codes

Category	Subquestion	Universal	Groningen	Reading
Features Cycling city	1	x		
Stimulating factors / Opportunities	2	U3	D3	R3
Restraining factors / weaknesses	2	U4	G4	R4
Existing Policies	3	U5	G5	R5
Establishment Policies	3	U6	G6	R6
PT: Actors involved	4	U7	G7	R7
PT: Context difference	4	U8	G8	R8
Advice for non-bicycle cities	5	U9	G9	R9

Appendix C: Maps

Figure 3.1: Selected cases
Source maps: Esri (2015)

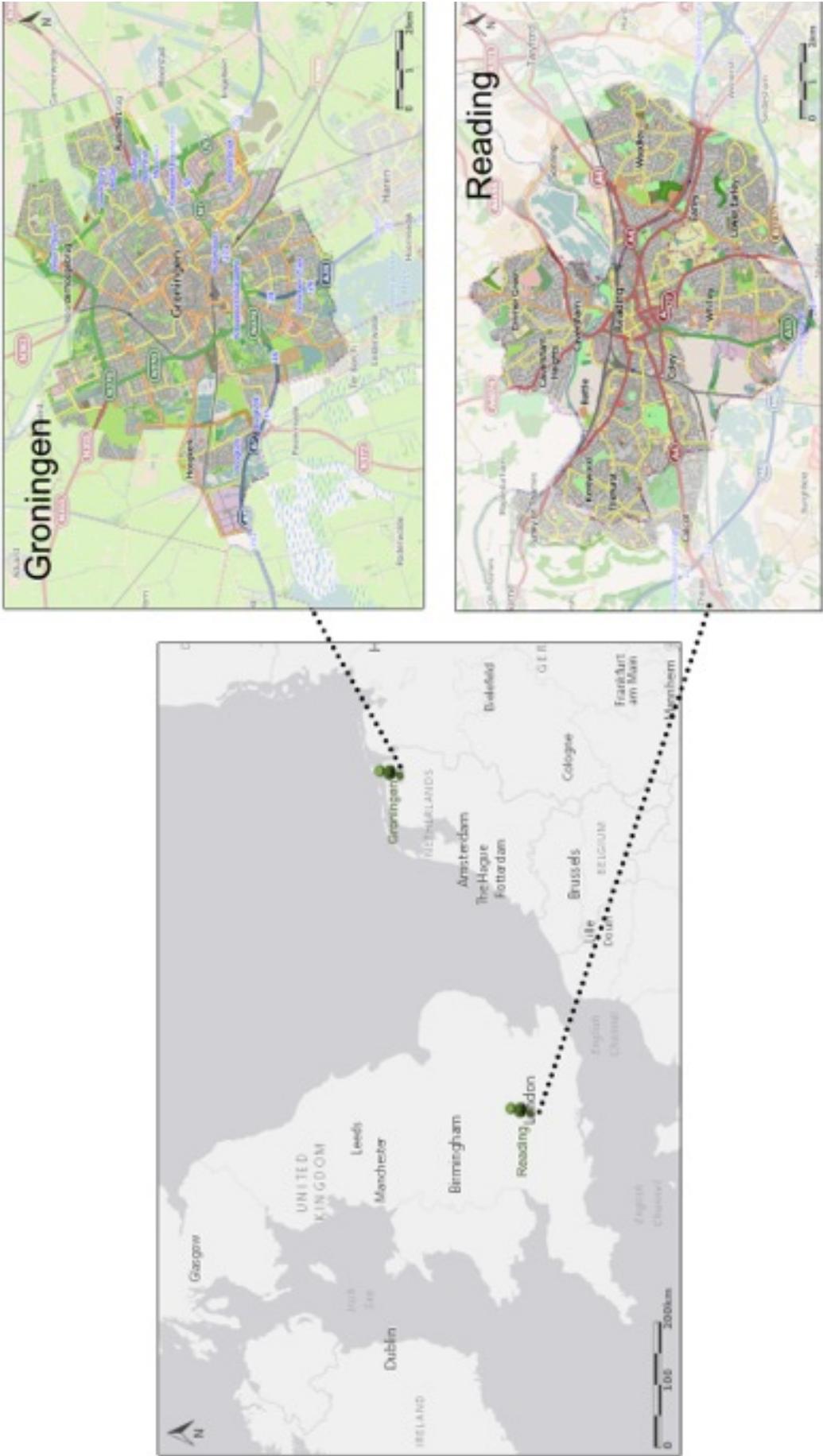
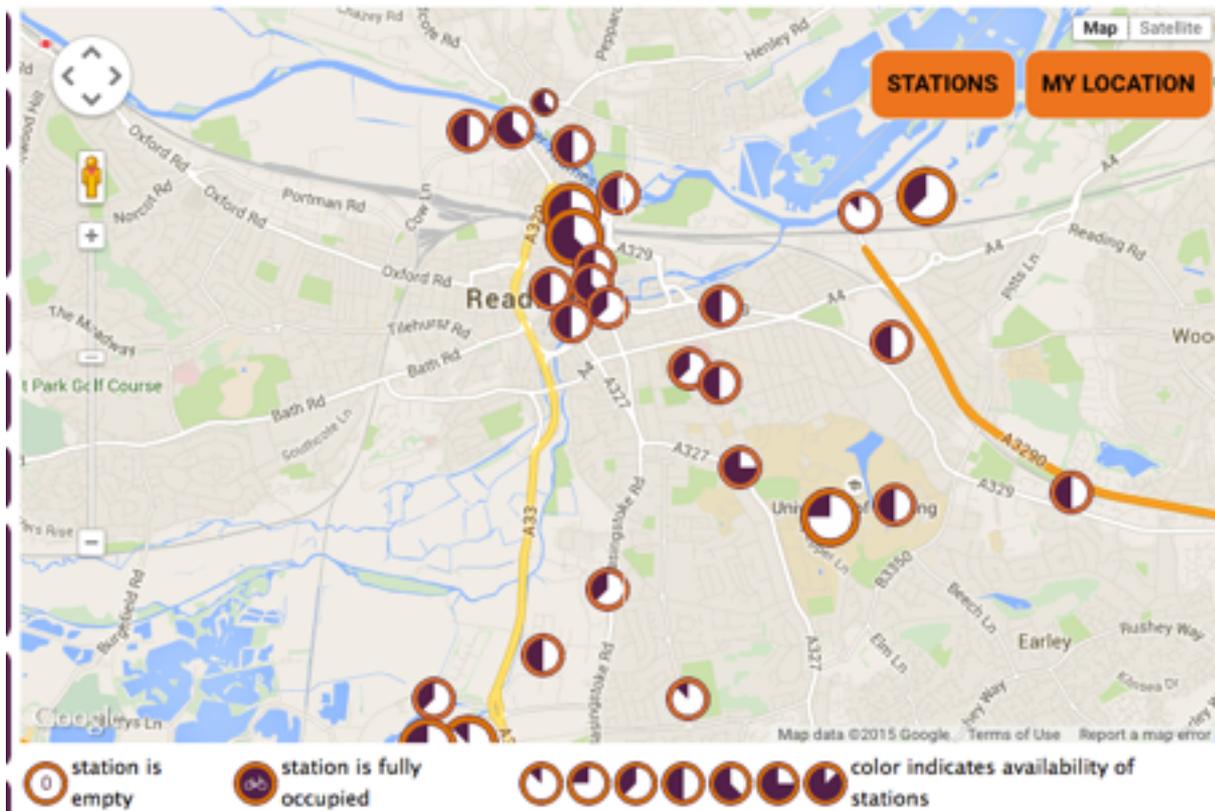


Figure C.1: Stations Bike Hire Scheme
Source: Reading Borough Council (2015a)



Appendix D: Stimulating and constraining factors influencing cycling use

	Groningen		Reading	
	<i>Constraining factors</i>	<i>Stimulating Factors</i>	<i>Constraining factors</i>	<i>Stimulating Factors</i>
Policy				
Planning process	<ul style="list-style-type: none"> • Lost focus of cycling within the traffic and transport system 2005 -2014 	<ul style="list-style-type: none"> • Long-term strategy with network planning • Strict spatial planning • Rigorous choices regards the traffic and transport system • Cycling is always part part of traffic and transport policy, in every project and plan. • Go with times • Positive approach • 	<ul style="list-style-type: none"> • Cycling not consistently part of planning process within the traffic and transport system 	<ul style="list-style-type: none"> • Cycling strategy
Policy content		<ul style="list-style-type: none"> • Comprehensive cycle network: complete & safe • Bicycle facilities • Separate traffic lights for cyclists 	<ul style="list-style-type: none"> • Cycling information seems not always to be right 	<ul style="list-style-type: none"> • Bike ability training • Comprehensive information about cycling in Reading
Framework of factors influencing cycling				
Spatial variables	<ul style="list-style-type: none"> • Unsafe cycle roads: too many cyclists/ too many cars • Cycling facilities are overcrowded 	<ul style="list-style-type: none"> • Compact city: short distances between activities • Not hilly • Extensive cycle network • Cycling bridges • Cycling facilities such as guarded parking places 	<ul style="list-style-type: none"> • Compact city: small roads and less space • No comprehensive cycling infrastructure • Not many bicycle facilities 	<ul style="list-style-type: none"> • Compact city: short distances between activities • Not to slightly hilly • New cycling bridge
Socio-economic variables	<ul style="list-style-type: none"> • Status 	<ul style="list-style-type: none"> • High bicycle ownership • Many students who travel by bike • Cycle skills are common 	<ul style="list-style-type: none"> • High car ownership • Low bicycle ownership • Not everyone can cycle 	

Psychological variables	<ul style="list-style-type: none"> Negative approach towards cycling in Groningen 	<ul style="list-style-type: none"> Cycling in Dutch culture It is considered as normal to cycle Positive approach towards cycling 	<ul style="list-style-type: none"> Cycling is not really embedded in the British culture 	<ul style="list-style-type: none"> Integrating cycling in the traffic and transport system becomes more prevalent within the UK Consciousness of sustainability development
Remaining variables	<ul style="list-style-type: none"> Many traffic lights 	<ul style="list-style-type: none"> Cycling is a relative quick travel mode in the city centre Car parking places are expensive 	<ul style="list-style-type: none"> Advanced bussystem 	<ul style="list-style-type: none"> Congestion (cars & busses)