



SLOWING DOWN?

WHY CITIES SHOULD DECREASE CAR SPEED

AND WHY THEY DO NOT

WITH LUND, MALMÖ AND LILLE EXAMPLES



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Submitted in partial fulfilment of the requirements for the International Master's Programme in Environmental Studies and Sustainability Science (LUMES) at Lund's University, Sweden

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LUND, SWEDEN - SPRING 2008

ACKNOWLEDGMENTS

I would like to thank my father for reading through my paper several times and giving me precious feed-backs and my mother for layout comments and help. I am also thankful to Lena Smidfelt Rosqvist for sound advice and expertise. At last, I am thanking Ellen Rube for her translating skills and helpful comments.

I would never have achieved this thesis without the support of all my Swedish, French and international friends, in Lund, Lille and elsewhere. I am very thankful to all of them. I gained a lot from talks with all my LUMES classmates, especially Jen, Yo and Camille. I have learned a lot thanks to many great teachers at LUMES. I especially would like to thank Anne Jerneck and Turaj S. Faran for support and precious advice and highly interesting debates.

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Thesis title	Slowing down? Why cities should decrease car speed and why they do not with Lund, Malmö (Sweden) and Lille (France) examples	
Reference proposal	Delepierre Camille (2008), <i>Slowing down? Why cities should decrease car speed and why they do not</i> , Lund University Master's Thesis, LUMES, Sweden.	
Academic programme	Lund University International Master's programme in Environmental Studies and Sustainability Science (LUMES) Within Lund University Centre for Sustainability (LUCSUS)	
Supervisor	Lena Smidfelt Rosqvist	PhD on the urban driving patterns and car exhaust emissions in 2003 at Lund University, currently working at Trivektor in Lund, Sweden
	Number of pages 50 pages	Number of references 73 references
Key words	Urban and traffic planning, sustainability, urban car speed, traffic calming, civil servants, decision-makers, decision-making process	
Abstract	<p>Using trans-disciplinary and holistic thinking, this paper brings some answers to the following questions. What are the theoretical reasons why cities should or shouldn't decrease car speed within their limits? And why are cities implementing this measure, or not, in practice? Literature review and interviews of civil servants and decision-makers in Lille (France), Lund and Malmö (Sweden) brought data to this study.</p> <p>Literature findings show that decreasing car speed in cities mostly brings positive social, environmental and economical effects. Traffic safety improves, air and noise pollution indexes go down, urban sprawl is no more on the rise and public expenses are reduced. Authors also mentioned a few reasons not to decrease car speed, among others: disturbed bus travel times and lack of know-how.</p> <p>Interviews with decision-makers and civil servants reveal that the main actual driving forces to decrease car speed are among others: improved traffic safety and urban environment or institutions' traditional interests. Results also show that cities that have implemented low car speed policies with success, have done so thanks to the quality of teamwork between the civil servants and the decision-makers, well designed projects and adequate financing. Cities haven't implemented lower car speed limits mainly because of political fear and because little interest was shown in favour of the low car speed issue.</p> <p>An important conclusion of this paper is that the reasons to decrease car speed in cities differ in theory and practice. Literature mainly emphasised "hard facts" which can easily be measured through quantitative indicators, while interviews in this study revealed many "soft facts", i.e. different political and organisational driving forces in favour of the low car speed policy and solid barriers opposing it. The paper eventually lists some advice to cities willing to decrease car speed. They should first make the issue clear to the stakeholders, residents, shop keepers, local elected officials and civil servants and set up information campaigns as well as send information to the press to avoid any wrong perception of stakeholders' opinions and what is at stake. It is essential for the local elected officials to ensure a good teamwork with civil servants and technicians in the field to implement the policy. At last, implementing a low car speed policy should be done in one collective effort rather than street by street.</p>	

<p><i>Abstract in Swedish</i></p> <p>Sammanfattning</p>	<p>Med användning av ett tvärvetenskapligt och holistiskt systemtänkande svarar den här uppsatsen på följande två frågor. För det första; vilka är de teoretiska skälen till att sänka bilhastigheterna i städer? För det andra; varför sänks, eller sänks inte, hastigheterna i praktiken? Frågorna har besvarats med hjälp av en litteraturstudie och intervjuer med lokala tjänstemän och politiker i Lille (Frankrike), Lund och Malmö (Sverige).</p> <p>Litteraturstudiens resultat visar att de teoretiska anledningarna till att sänka bilhastigheterna i städer är att de sänkta hastigheterna i huvudsak ger positiva sociala, miljömässiga och ekonomiska effekter. Trafiksäkerheten förbättras, luftföroreningar och buller minskar, stadens utglesning avtar, lokala centrum blir mer attraktiva och de offentliga kostnaderna minskar. De teoretiska barriärerna mot att sänka bilhastigheterna är få. Det rör sig huvudsakligen om störningar på bussystemet och brist på praktisk kunskap om tillämpning.</p> <p>Resultaten från intervjuerna med politiker och tjänstemän visar att de huvudsakliga verkliga orsakerna till att städer har sänkt bilhastigheterna är förbättrad trafiksäkerhet och stadsmiljö eller institutionella traditioner och intressen. Resultaten visar också att städer har sänkt bilhastigheterna tack vare ett välfungerande samarbete mellan tjänstemän och politiker, väl designade projekt och lämplig finansiering. Huvudorsakerna till att de flesta städerna inte har infört sänkta bilhastigheter i stor skala är politisk rädsla och brist på intresse för sänkta hastigheter.</p> <p>En viktig slutsats från denna studie är att skälen till att sänka bilhastigheterna i städer i stor utsträckning skiljer sig mellan teori och praktik. Litteraturen fokuserar i huvudsak på hårda fakta medan intervjuerna i denna studie visade på många politiska och organisatoriska drivkrafter och barriärer. Med utgångspunkt i denna slutsats är viktiga åtgärder för att sänka bilhastigheterna i städer t.ex. att förbättra samarbetet mellan tjänstemän och politiker samt att organisera möten mellan olika intressenter för att undvika missförstånd om varandras ståndpunkter.</p>
<p><i>Abstract in French</i></p> <p>Résumé</p>	<p>Grâce à une démarche transversale et systémique, cette étude a pour objet d'apporter quelques éléments de réponses aux questions suivantes. Quelles sont les raisons, en théorie, pour et contre la réduction de la vitesse des voitures en ville ? Dans la pratique, pourquoi les villes mettent-elles en œuvre de telles mesures ? Pour répondre à ces questions, l'auteure a procédé à une recherche d'informations dans la littérature existante ainsi qu'à des interviews de décideurs politiques et du personnel des services techniques concernés à Lille (France), Lund et Malmö (Suède).</p> <p>L'étude d'articles scientifiques a révélé de nombreux effets positifs de la réduction des vitesses urbaines sur le plan social, économique et environnemental ; parmi les plus importants : la diminution des accidents, la baisse des indicateurs de pollution atmosphérique et sonore, la réduction de l'étalement urbain et la diminution des dépenses publiques. Les auteurs mentionnent également quelques inconvénients de la réduction de la vitesse en ville, en particulier la gêne causée à la circulation des autobus urbains ; ils signalent également le manque de savoir-faire pour réduire effectivement et efficacement la vitesse des voitures en ville.</p> <p>Les interviews des décideurs et des techniciens montrent que les facteurs les plus importants en faveur de la réduction de la vitesse des voitures en ville sont la diminution des accidents, l'amélioration de l'environnement urbain ainsi que les problématiques « préférées » de la ville. Les villes qui ont réussi à diminuer la vitesse de la voiture sur leur territoire y sont arrivées grâce à la qualité des relations entre les décideurs et les techniciens, la conception de projets et un financement adéquat. Au contraire, d'autres villes ont échoué en raison de l'absence de volonté politique ou d'intérêt porté à la réduction de la vitesse des voitures en ville.</p> <p>L'un des résultats les plus significatifs de cette étude montre que les raisons de réduire la vitesse de la voiture en ville, ou pas, diffèrent du point de vue théorique (résultat de l'étude d'articles) et pratique (résultat des interviews). La littérature insiste sur les données « quantifiables » que l'on peut facilement mesurer via des indicateurs quantitatifs tandis que les interviews ont majoritairement fourni des données « non quantifiables » liées aux attitudes et aux processus de décisions. Cette étude donne finalement quelques pistes pour mettre en œuvre ces politiques. Il faudrait d'abord que la question de la réduction de la vitesse en ville et ses effets soient parfaitement compris par toutes les parties concernées : résidents, commerçants, élus locaux, techniciens de la ville et que les positions et opinions de chacun soient claires et comprises de tous. Enfin, il vaudrait mieux engager la réduction de la vitesse des voitures au plan d'un quartier, ou de la ville toute entière, c'est-à-dire engager un effort et un projet collectifs, plutôt que de tenter de la mettre en œuvre rue par rue.</p>

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INTRODUCTION

Urban sprawl, decaying urban districts, social problems, traffic accidents, air and noise pollution levels and energy consumption are on the rise in urban systems. Not one single measure can solve them all at once. But car speed, affecting all these urban processes, can contribute to more sustainable transportation urban systems. However, very few cities such as Graz in Austria and Lorient in France have enforced large scale low car speed policies. The purpose of this paper is therefore to bring a better understanding about car speed decrease as a tool for more liveable urban environments. Indeed, the main issues are:

- What theoretical reasons can explain why a city should or shouldn't decrease car speed within its limits?
- On what grounds are cities decreasing car speed or not?
- Collateral and specific questions will need to be answered too: Do interview findings confirm the literature driving forces and barriers? How is low car speed launched as a strategy? On this specific issue, what is the decision process? How do such issues end up on the political agenda? Who owns the question of car speed decrease? On whose shoulders is the low car speed policy laying? Finally, could civil servants, as knowledgeable stakeholders be considered a driving force to implement measures to reduce car speed in cities?

The author's central position is that decreasing car speed contributes to more sustainable urban systems, though it is, as mentioned above, little implemented. This paper therefore intends to bring a better understanding about two issues: how decreasing car speed contributes to more sustainable urban transportation and why such policies are not often implemented on large scale. According to the author, decreasing car speed is a feasible first step towards more radical measures for sustainable urban systems such as "car-few" cities and pedestrianisation.

The author focuses mainly on the "whys", leaving out of scope the "hows", the how approach dealing with the means to decrease car speed such as signs, roundabouts or speed bumps and their impacts. The paper mainly focuses on European urban areas and "western" cities including central as well as residential areas. It leaves out of scope the transportation issues between cities. Most examples are taken in Europe, from the UK, the Netherlands, Germany, Denmark and France. However, the author considers that most findings can be applied to other cities in the world.

This paper is relevant because it focuses on urban areas, car speed and traffic safety through a holistic approach. Indeed, half the world population currently lives in urban areas and 70-80 % will do so in the next decades; hence, car speed policies in ever growing cities affect billions of people worldwide. Car speed is easy and cheap to measure, easy to explain; car speed data and its impacts have been collected in large databases for many decades. Traffic safety is closely related to car speed in urban areas as 2/3 of vulnerable road users are hit in city environments. At last, the holistic approach is seldom chosen in academic papers; articles usually focusing on one aspect or the other.

The purpose of this paper is to arouse the interest of any reader on the effects of low car speed policies in urban centres, as a major mean to create more sustainable urban transportation systems and liveable cities.

The **first chapter** presents the trans-disciplinary and holistic methodology, as well as the methods used: literature review, to understand the theoretical reasons to decrease or not car speed in cities and interviews of civil servants and city officials in Lille (France), Lund and Malmö (Sweden), to clarify the actual stakes. Finally, the analytical framework depicts the author's approach to cities, transportation and sustainability and their interrelations. The **second chapter** exposes through literature findings the main theoretical reasons to decrease or not car speed and concludes that decreasing car speed in cities mainly brings positive social, economical and environmental effects. The main reasons in favour of low car speed limits are among others: improved traffic safety, better health and social life, decreased air and noise pollution levels, better turnover for shop keepers and a reduction in public expenses. The theoretical reasons not to decrease car speed or barriers are few. Some support the wrong idea that car speed brings higher car flows and saves times which are perceived and wrong barriers. Actual barriers standing in the way of low car speed policies include disturbance imposed on bus travel time, bikers and motorcyclists decreased safety as well as disadvantaging effects on "captives". Other barriers come from the city hall: lack of knowledge and know-how and poor city management. The last reasons deal with the subjective following issues: higher speed would increase urban productivity and lower speed would bring higher urban density. The **third chapter** focuses on the "real" reasons using data collection from official documents, as well as interviews of civil servants and local elected officials in Lille (France), Lund and Malmö (Sweden). The main "actual" reasons why cities have imposed low car speed limits are among others: improved traffic safety and urban environment or institutional tradition and interests. It also shows that cities have implemented low car speed policy thanks to the quality of teamwork between civil servants and city hall decision-makers, well designed projects and adequate financing. The main reasons why cities haven't implemented lower car speed limits are, among others, lack of knowledge and know-how, political fear and absence of interest in the low car speed issues. Finally, the **fourth chapter** lists limitations. It compares literature and interview findings

describing that theoretical reasons mainly emphasise “hard facts” such as improved traffic safety or increased turnovers, while interviews revealed many political and organisational driving forces and barriers such as quality of teamwork, communication or political fear. At last, the chapter lists the actions that a city can take to implement low car speed policies such as improving teamwork between civil servants and decision-makers on low car speed or setting up meetings with all stakeholders to avoid wrong perception of each other’s opinion.

CHAPTER 1:

METHODOLOGY AND ANALYTICAL FRAMEWORK

This chapter describes the overall methodology, as well as the literature review and interview methods. It also presents the analytical framework allowing the reader to understand the author's general approach and visions of the city, transportation and sustainability concepts.

1.1 Methodology

General methodology as well as literature review and interview methods used are explained in this section.

1.1.1 Overall methodology

"Methods are simply not neutral tools" Bryman (2004, page 4). Describing the general scientific tradition supported by the author, the following paragraphs raise awareness of research processes in order to comply with the most transparent approach, reliability and replicability.

The general approach is trans-disciplinary and cross cutting, including economics, urban and traffic planning, geography, sociology, ecology and political science knowledge and theories. The holistic and systemic thinking (looking at the problem as a system made of cause-consequence relations) was used to develop the author's own understanding of the issue and emphasised that car speed is a driver of many urban phenomenon. The paper, focusing on measures and their effects on people's lives, is a qualitative social research. It has adopted the analytical inductive method (Ragin, 1994) going back and forth from ideas/theory to evidence. On the ontology¹ level, it supports constructivism that states that social actions are constantly accomplished by social actors, in opposition to objectivism and essentialism. On the epistemology level, the research stands on the interpretivist concept, rather than on positivism or realism. The author aimed at neutrality, the interviews, data collection and analysis are of course subjective. She was therefore aware of her own background, views and potential bias. The interviewees' professional and academic background was also asked during each interview. A research diary was kept during the whole process to

¹ Ontology raises the following questions. What is "truth"? Are social phenomenon independent from social actors? Epistemology is the theory of knowledge raising the following issue. How can we know about "truth"?

keep track of the findings and achieved work. It also helped keeping track of the evolution of the research questions and author's views; thus raising awareness of the research steps to get reliable data and findings. At last, the goal of this research is to understand better the low car speed phenomena, through the exploration of three case-studies: Lille in Northern France, Lund and Malmö in Southern Sweden.

Literature review and interviews with civil servants and local elected officials used during the research will be described in the following paragraphs.

1.1.2 Literature review methods

The articles and books were selected in the Lovisa and Elin databases of Lund University library and on a French urban planning database called Urbamet, as well as on the databases of the following websites www.transguide.org, a transport research portal and www.toi.no, Norwegian centre for transport research. As literature on the various effects is tremendous, the author selected the major articles in each domain to present a variety of approach such as radical and less radical, economical or social approaches, in French, English or Swedish, with and without sustainability approach.

All sources were found in a scientific context and are reliable. Four of the main sources are Frédéric Héran, Marc Wiel, François Ascher and Yves Crozet well-know French researchers in economics and urban planning. CERTU (see glossary) – the French Transport Research Institute - was also used as a reference because it publishes high quality documents and research reports. Rune Elvik, acknowledged researcher from the Norwegian Centre for Transport Research in Oslo and Todd Litman from the Victoria Transport Research Institute were used as sources too. Ingrid Van Schagen's report from the SWOW -Institute for Road Safety Research- and Ton Hummel's report were contracted and published by the Swedish National Road Administration, Vägverket in Swedish.

The author mainly relied on researches carried out by Marc Wiel, Frédéric Héran, Todd Litman, Tim Pharaoh, Ingrid Van Shagen and Ton Hummel because of their rather holistic approaches.

1.1.3 Fieldwork methods

Where? Lille, Lund and Malmö

Lund and Malmö in Southern Sweden as well as Lille in Northern France were studied because they have designed and implemented policies to decrease car speed. Lund has enforced a 30 km/h centre. Lille has implemented over eighty 30 km/h zones. Malmö is experiencing a 40 km/h speed limit trial in a central area which recently was turned to a permanent speed limit (Sydsvenskan, 2008 May 9th). Moreover, urban and

traffic planning research requires “real” knowledge of the city studied, and the author experienced all three cities. At last, in all three chosen cities the author could use some previous contacts to get interviews.

Who? Civil servants and local elected officials

The fieldwork was focused on civil servants and decision-makers as they are the main actors of the decision-making process of car speed strategy. Other stakeholders related to decision-making such as public opinion, the media, public transportation companies are considered in the discussion.

Twenty-two civil servants and decision-makers were interviewed (see appendix 1 for list of names and functions). During the fieldwork, the author interviewed members of transportation research institutions such as CERTU (see glossary) who could have a broader understanding of driving forces and barriers affecting municipalities on the low car speed issue.

Why? To know the “actual” driving forces and barriers of a lower car speed

The fieldwork aimed at assessing the actual driving forces and barriers to the decrease of car speed, the decision-making processes and the major similarities and differences between civil servants and decision-makers’ answers.

How? Official documents review and interviews

The fieldwork was carried out through the reading of official documents as well as official city websites, partly to confirm interviewees’ answers. Interviews were chosen as a method to reach more detailed information because the method makes it easier for the interviewees to transfer their knowledge. Moreover face-to-face interviews allow extra canals of communication such as voice intonations, body language, using and drawing maps which also contribute to larger transfer of information from the interviewee to the interviewer. Deep interviews were not considered appropriate as interviewees wouldn’t be able to give so much of their time and as low car speed strategy knowledge is scattered among several people. The author didn’t use a large scale survey method as the research aims at understanding well each driving force and barrier, rather than quantifying their importance.

The Lund and Malmö interviews occurred face-to-face in February-April 2008, in English and Swedish. In Lille interviews were done on the phone in February-April 2008 (see appendix 1 for names and functions). As a validation and confirmation process, the interviewees were contacted again by mail and asked to confirm or cancel doubtful information. Data was also validated through feed-backs during the interviews as it was carried out in a conversational manner (Bryman, 2004, page 274, Yin, 2003, page 90). Interviews lasted less than 60 minutes as longer interviews wouldn’t be more efficient due to decreasing concentration.

At first, interviews were thought to be recorded. However after the two first on tape interviews were made, the author realised that the car speed issues were tricky and sensitive. More information would be revealed through unrecorded interviews. Thorough notes were therefore taken. Information was also gathered in a very informal way such as chatting “in between doors”.

The fieldwork tended to avoid any bias. The author paid attention to most neutral appearance and not to claim personal opinions. Interviews were semi-guided with help of an interview guide, including general themes and tricky questions to revive the discussion if it got stuck. The research questions led to interview themes: general transportation situation and issues of the city with historic input, implemented car speed measures as well as car speed strategy, the reasons why their measures were enforced and if they had changed over time, the decision making process and general political situation. The themes could be answered in any order; the author just filling a table during the interview. Questions were designed to avoid “closed answers” like yes or no; they were intended to offer a real prospect and not only improve the author’s own reference frame (Bryman, 2004, page 342).

With more interview experience and ever growing knowledge of the case-studies, interviews improved. At first, interviewees explained that they might not have the “required” knowledge; because questions were too focused and especially because almost none of them were officially in charge of decreasing car speed. The questions were changed to allow interviewees to give more “free” answers.

Methods selected for data processing

1. Before interviewing, possible outcomes and expected findings were written down. As the author was aware of them, she was able to reach more neutral findings.
2. During interviews, notes were taken. After each interview, extra comments on the author’s thoughts about the interview were written down immediately. Extra questions were then sent by email to clarify any doubtful information.
3. Data was gathered on three tables (one for each case-study) with several themes: general transportation knowledge, car speed plan, driving forces and barriers, political situation and decision making processes.
4. When all interviews were carried out, driving forces and barriers from all three cases were listed and sorted by number of occurrences.
5. Theoretical and interview findings were compared, as well as the civil servants and decision-makers’. Finally, driving forces and barriers that cities can influence were gathered.

1.2 Analytical Framework

The purpose of this section is to put the research into the author's broader view of transportation, city and sustainability so as to help the reader understand the author's personal approach and reasons.

As a first step, debating and agreeing about central concepts such as city, sustainability or transportation is necessary to reach communicative rationality as Habermas calls it. The philosopher explains that there are several realities, and the only “truth” is the one we share and reach through communicative rationality. For instance, researchers, urban planners and local elected officials have considered various urban functions as essential such as defence. Wiel (2007) has claimed social interactions to be the main urban function; according to him, it is to be preserved through lower urban car speed limits. Other urban planners explain the “birth” of cities by trade: city were “crossings” where goods were exchanged. Those realities have to be debated so that we agree on a “shared” truth, a “common” reality. Similar visions of sustainable urban systems can then be reached among stakeholders.

In any case, cities imply transportation of goods and people. Transport as a necessary component of the city only needs to be managed. Until now, national strategies have aimed at increasing mobility (see glossary) for the sake of economic growth. Greene (2001) explains that as transportation and economic growth have risen at the same rate, increased mobility (i.e. number of kilometres travelled per person) would be a necessary parameter of economic growth. But transportation trends have proved to be very unsustainable. Moreover scientists have known for 5-10 years that the connection between mobility and economic growth isn't obvious and that increased mobility isn't necessary to economic development. Decision-makers and public opinion are acknowledging it today; national and local transport strategies are switching to more sustainable goals, daring not to aim at have increased mobility as an end in itself. It's time to define sustainability and sustainable transport that can be rather blurry.

In 1987, “Our common future” report of the World Commission on Environment and Development (or “Brundtland commission”) defined sustainable development as it is widely understood today as "a development that meets the needs of the present without compromising the ability of future generations to meet their own needs." The author supports a vision of urban systems based on long-term and strong sustainability. This vision emphasises that economic, ecological or social capital should be maintained, as natural capital cannot be substituted by physical or human capital, that some environmental components are unique and some processes are irreversible.

As to sustainable transportation, it doesn't have an agreed definition. “There is no such thing as a generally accepted definition of ‘sustainable transport’, and it is doubtful whether one would – or could – ever exist.” (Nijkamp in Gudmundsson, 2007, page 1) Sustainable transportation is not a scientific concept;

it is a policy invention “intended to shape a strategic discourse about future transport policies” (Gudmundsson, 2007, page 3). Gudmundsson (2007, page 66) concludes his report by a practical definition² of sustainable mobility as “a vision of transport systems, location patterns and mobility behaviours that serve a society which is developing within the limits of sustainability overall. Sustainable mobility cannot be defined in the absolute, but potential steps towards it may be tentatively assessed. To be considered as a potential step towards Sustainable Mobility a change or a policy need to fulfil two overall criteria, it should, as least,

- contribute overall to reduce pressures on natural life support systems (including climate system), that are overexploited with regard to their continued support of society’s needs, or are at the risk of becoming overexploited within the effective lifetime of the change or policy
- and contribute overall to increase the well-being in a broad sense of the present generations, avoiding entirely negative effects on people living in absolute poverty.

In addition, it should be designed and implemented with the active participation of relevant major stakeholder groups.

At last some important steps towards a more sustainable transportation system are exposed. According to the author, one of the major step towards a more sustainable transportation system is fewer trips and decreased mobility. It doesn’t mean decreased freedom, because it can occur parallel with decreased need of transportation and increased accessibility. The eco-localist sustainability scenario³ for instance considers fewer trips as a major feature of a possible more sustainable future world. It insists upon a local way of life leading to fewer and shorter trips of goods and people. It can be achieved through a decreased need for transportation as well as less transportation stimulation. Both alternatives are described in the following paragraphs.

The main tasks to reach sustainable transportation belong to the city and traffic planners. They have to decrease the need of transportation by changing the city shape and structure which requires long-term studies and effort. Most people see the availability of fast transportation, mainly driving a car, as a basic right. Consequently, they also consider decreasing this possibility as an infringe to their freedom (Wiel, 2002, page 112). However they don’t appreciate travelling, when they have to. “It is no longer freedom when

² OECD defines it as “... transport that does not endanger public health or ecosystems and meets needs for access consistent with the use of renewable resources below their rates of regeneration , and use of non-renewable resources below the rates of development of renewable substitutes” (Gudmundsson, 2007, page 30).

³ Eco-localism is a “sustainability scenario”. It emphasises the importance of the place, local economy development with local currency, local eco-systems... It rejects the place-less, community-less economic actor (*homo economicus*) of neoclassical theory with its presumed boundless hedonism and insatiable preferences. Economic decisions are made within particular communities and culture that understand the vital significance of the local eco-system, soils, watershed, etc. to the local economy. In this place-rooted, local context, the health of the one determines the health of the other. Eco-localism implies little transportation, though it allows local-economy development, more awareness of local eco-systems and fulfilment of social relationships with humans and nature (Curtis, 2003).

you are forced to do it. Reduced travelling does not necessarily imply a decreased standard of living or decreased individual freedom. On the contrary, if the need for travelling is decreased it could actually mean increased freedom. In this way, the spiral can be stopped which constitutes increasingly unpopulated areas, which leads to an increased dependency on motorised transport, which leads to increasingly unpopulated areas . . .” (Ekman et al, 1996, page 8).

Fewer travel stimulations such as transportation supply and high car speed limits would also lead to fewer trips. Increased transportation supply such as more roads and faster speed limits has been proved to lead to more transportation demand, i.e. more trips (Cairns, 2002). London and Stockholm offering very many roads and high speed limits, i.e. stimulating traffic are experiencing congestion problems. They therefore are implementing congestion charging schemes to control traffic in their town centres. However, Wiel (2002) claims the strategy’s illogic and inequity: stimulating car traffic by large transportation supply and then restraining it through road pricing. He advocates instead the decrease traffic stimulations, that is to say to decrease number of roads and lower car speed limits. Moreover, London and Stockholm congestion charging strategy can be considered inequitable because they allow a few to pay and to travel fast, when the poorest have to find other cheaper transportation solutions. In a system where traffic is less stimulated, all can travel for free and at lower speed.

CHAPTER 2: THEORETICAL FINDINGS

LITERATURE REASONS FOR A CITY TO DECREASE ITS CAR SPEED OR NOT TO

This chapter focuses on the effects of a lower car speed in cities to grasp the reasons why a city should or shouldn't have a low car speed policy. It relies on literature and theoretical findings; leaving out of scope the "reality" reasons that the cities actually use when decreasing car speed or not (which will be the focus in chapter 3). The following question will be answered: What theoretical reasons can explain why a city should or shouldn't decrease car speed within its limits?

The effects of low car speed measure can vary according to the scale of implementation and of investigation (street, area or city). For instance, some authors base their arguments on research on public transportation in the large city of Paris; their conclusions aren't automatically applicable to a small town like Lund. Another example is the following: according to some researchers in city planning, a traffic calming scheme can benefit shop keepers, while affecting negatively the economy of the whole city. All in all, assessing the comprehensive effects of low car speed policy at various levels is a difficult task due to the great numbers of variables to be studied. It is a limitation of the chapter's findings.

2.1 Reasons to decrease car speed in cities

A wide literature shows the positive effects of decreasing car speed in cities. They are presented in four "categories" for a better understanding even though some reasons belong to several categories. The positive effects of lower car speed include improved traffic safety and public health, lower air and noise pollution, increased turnovers for shop keepers, as well as less urban sprawl or barrier effects.

2.1.1 The social reasons

Traffic safety is a major reason to decrease car speed in cities, because the faster the car is driven, the more time and distance it needs to stop, the less chance there is to avoid the obstacle (Natarskyddföreningen, 2007, page 8). Moreover, 10 % of pedestrians knocked down by a car will survive, if the car has a 50 km/h

speed; whereas 90 % will survive if the car has a 30 km/h speed (Vägverket, 2002, page 4)⁴. Elvik (2000, page 327) has studied the effect of reduced car speed on safety and concluded that an area-wide urban traffic-calming scheme (see glossary) reduces the number of injury accidents by about 15 %. This result is stable over time and space, as found thanks to a meta-analysis of results from 33 studies in eight countries.

High speed increases vertical and horizontal disparities, whereas both of them are improved by traffic calming measures as they balance the different uses of a street (Litman, 1999, page 22 and Wiel, 2002, page 99, Gorz, 1973⁵ and Illich, 1975). Horizontal equity refers to the distribution of impacts among people or groups considered to be equal in wealth and ability. Cyclists are far more likely to be killed or injured in a traffic accident than are vehicle occupants; they benefit traffic calming schemes more than car drivers which leads to decreased horizontal disparities. Vertical equity refers to different impacts among people considered to differ in wealth and ability as people economically, physically and socially disadvantaged tend to drive less than average. Better walking conditions induced by slower car traffic and traffic calming schemes will specifically favour handicapped people; thus decreasing the vertical disparity (Litman, 1999, page 22).

People's health is another major reason. Indeed, "sedentary lifestyles in industrialized countries are increasingly becoming a major health risk, and it is estimated that insufficient physical activity causes 1.9 million deaths worldwide annually" (WHO, in Badland, 2005). "The urban environment and modes of transport are increasingly being linked to physical activity participation and population health outcomes. [...] Fostering suitable urban environments is critical to sustaining physical activity behaviours." (Badland, 2005, page 177 and Litman, 1999, page 12; Morrison, 2004, page 837).

Slower car speed improves street social life, whereas high speed disturbs it. Many social interactions were happening in the street before public space was "instrumentalised" by urban mobility (Goudron, in Wiel, 2004). Lower car speed contributes to more attractive public spaces and even decreases crime rates. In Dayton, Ohio, a traffic calming scheme reduced neighbourhood crime by 25-50 %, the authors understood it as an improved social structure caused by the traffic calming programme, (Hummel, 2002, page 13). At last, traffic calming enhances community feeling and increases social interaction among residents (Smith and Appleyard, in Hummel, 2002, page 13) (Jones, in Litman, 1999, page 16). At last, the independent mobility of children is increased with lower car speed and improved traffic safety, which has large and long-term social and health positive impacts.

⁴ Similarly "several studies have shown that the risk of a pedestrian receiving fatal injury at an impact speed of 50 km/h is approximately 10 times higher than at an impact speed of 30 km/h." (Haworth, 2001, page 1).

⁵ Gorz (1973) argues that human beings are most equal when walking; car speed being a privilege for a few to travel faster than others. « Over a certain speed, nobody gains time without another losing time. Someone, claiming a seat in a faster vehicle, states that his time is worth more than the time of a passenger of a slower vehicle. Every passenger transforms itself in a time thief" (Illich, 1975) Illich also introduces the concept of social classification per degree of speed, meaning that the faster you travel, the highest you are on the social ladder.

Social segregation has been increased by faster urban speed limits. Indeed, the segregation scale is the accessible spaces within a 20 minutes trip and urban sprawl has led to specialisation of large places (Wiel, 2006 and 2007).

By contributing to the creation of large suburban and sprawled areas, high car speed limits actually reduce suburban accessibility compared to the central areas. For instance, a resident in suburban-Paris can reach two to three times fewer destinations than if he lived in the centre (Héran, 2007, page 15-16). Though higher speed limits might lead to better accessibility for a short time span, urban sprawl will lower accessibility in the long run.

2.1.2 The environmental reasons

Decreasing car speed affects positively the air pollution levels in cities in two ways. The exhaust emission of one single car is lower at 30 than 50 km/h because of smoother driving. Moreover, lower car speed limits bring fewer cars on roads and more passengers in the public transportation networks whereas more bikers and pedestrians use the road. Lower car speeds also decrease urban noise pollution.

Traffic calming schemes lead to lower exhaust levels per single car

First of all, the myth of lower emissions at 50 km/h lies in the misunderstanding of the graph of fuel consumption in relation with constant car speed is u-curved (see figure 1).

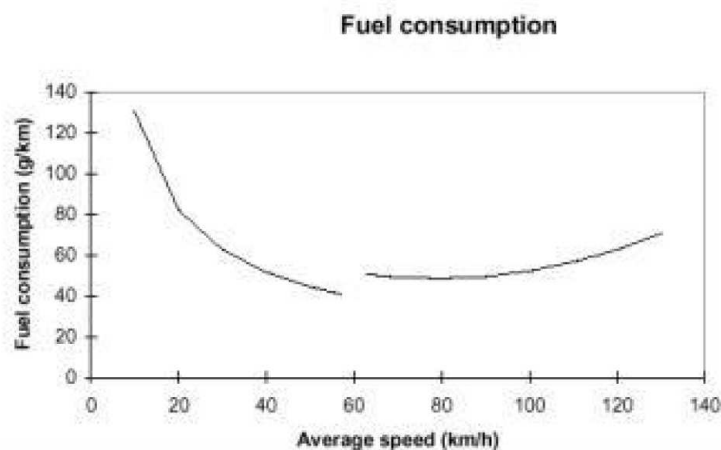


Figure 1: U-curve relation between fuel consumption and average speed (source: Haworth, 2001, page 2)

It can lead to a fast conclusion that decreasing car speed limit from 50 to 30 km/h increases fuel consumption; as it is lowest at 50-70 km/h (Haworth, 2001, page 2). However, urban car speed isn't constant. Complex urban driving patterns lead to a more complex situation. (Haworth, 2001, page 2) and (Smidfelt, 2003, page 41).

Average speed isn't the main characteristic of urban driving patterns that affects car exhausts; calm or fierce driving is the main influencing factor (Hedström, 1999, page 11), (Haworth, 2001, page 2). "A less polluting pattern is one with smaller amplitudes, a more even driving pattern." (graph and Hammarström, in Smidfelt, 2003, Paper 2). Smidfelt (2003, Paper 2) shows that fuel consumption and emissions with calm driving are similar at in 30 or 50 km/h area; however, with a fiercely driving pattern the emissions are more than twice as high in a 50 km/h area than in a 30 km/h area.

At this point, one wonders if lower car speed limits smoothen urban driving patterns. They will if the traffic calming scheme is well implemented. According to the French national transportation research centre, in 30 km/h zones traffic lights should be replaced by roundabouts and priority to vehicles coming from the right; this leading to smoother driving patterns and less speed variations (Héran, 2007, page 18) (Smidfelt, 2003). Moreover, according to Smidfelt (2003, page 41) "the effects of the driving environment on driving behaviour are shown to persist beyond the local environment".

All in all, calm-driving leads to lower emissions (quite independently from the average car speed). As traffic calming schemes induce calm-driving, they indirectly lead to lower emissions of any single car.

Lower car speed limits decrease the number of cars circulating

The following paragraphs will show how lower car speed limits decrease the number of circulating cars and increase public transportation use, walking and bicycling; thereby decreasing greenhouse gases emissions.

First of all lower car speed limits lead to fewer circulating cars. Litman (1999, page 13-14) estimates the reduction to be around 2 % at first and to 10 % in the long term if the average travel speed goes down by 10 %. Baumstark (2003, page 14) estimates the decrease to 20 % for a 33 % reduction of car speed. Such findings are surprising; some readers might want to contest them. However, Cairns (2002) also proved that traffic can disappear if transportation supply is decreased, i.e. fewer roads or car speed limits implemented.

Moreover constraining car use such as lower car speed limits is necessary to increase public transportation use. Indeed, lower car speed limits lead to more competitiveness and attractiveness of public transportation. Massot (2004) has modelled the modal shifts between car and public transportation in Paris and Lyon. She shows that with drastic improvement of public transportation (through huge public investments) and acceptance of longer trips by individuals, only up to 5 % of car commuters would switch from car to public transportation. "These results explicitly show that public transport policies have a small effect, if constraints to car use aren't made, notably constraints on car speed" (Massot, 2004, page 769). Lowering car speed limits also increases the walking and bicycling trips. Residents of a pedestrian friendly neighbourhood walked, cycled or used public transport 11 to 18 % more than in a similar car oriented neighbourhood (Cervero and Radish in Hummel, 2002).

Another environmental positive impact brought by lower car speed comes from the decreasing noise levels. Speed reduction from 50 to 30 km/h reduces **noise** levels by 2-5 decibels (Pharoah, in Litman, 1999, page 14), (Hedström, 1999, page 12).

2.1.3 The economical reasons

According to Wiel (2002, page 94 and 2006, page 10), high car speed is only necessary on roads between cities. It creates synergies between cities leading to more competitiveness of firms and to economic development. Indeed, the benefits resulting from higher car speed are marginal within cities; the disadvantages being many and described in the paragraphs below.

Lower car speed limits prevent cities from spending money on costly public investments in transport and urban regeneration. Indeed, if the city doesn't sprawl anymore thanks to lower car speed limits⁶, market forces will "automatically" prevent urban areas from decaying and prevent costly public urban renewal projects (Wiel, 2006). Similarly, considerable savings will be made on public transportation infrastructural costs⁷ if car use is restrained through lower speed limits. Indeed, cities spend tremendous public amounts of public funds on improving the public transportation system trying to reach the car service quality, though car use has to be restrained to increase public transportation use (Van Schagen, 2003, page 11) (Massot, 2004, page 768) (Herbert, 1997, page 154).

Increasing accessibility leads to more products and jobs accessible for individuals. And large employment markets attract more people. According to Smithian liberal market settings, a larger choice contributes to a "pure and perfect" concurrence (market forces at their optimum) and benefits companies as well as individuals and leads to higher economic growth rates. However, according to Héran (2007, page 11-12) hyperchoice or too much choice can disturb the supply-demand balance. The consumer confused by a very large choice isn't able anymore to find the right information and can even be discouraged to buy. The "optimal" number of transportation products has been proved to be seven; above this figure, the consumer finds it difficult to make up his mind.

Though sometimes feared by shop keepers, constraints on car use such as slowing down car speed or pedestrianisation has a positive effect on retailing, in the range of 5-20 % increased turnover (Hass-Clau, 1993). Moreover, prime retail rents increase by 45 to 80 %, after the implementation of a traffic calming scheme (Caton in Pharoah, 1993). If such research and results are communicated to shop keepers, they tend to be favourable to traffic calming schemes and even finance them in Denmark. Trade associations even

⁶ See page 20-21 for explanation of the relation between urban sprawl and car speed limits

⁷ In France, the public cost of transportation is ten billions euros, higher than the National Higher Education one (Wiel, 2006, page 11).

finance them. “In Denmark, trade associations acknowledge that well-arranged speed reducing roads have an add-on effect on sales for shops in the front line” (Kjemtrup, 1992).

Some shop keepers and traffic engineers claim that the decrease of car speed will lead to fewer vehicles in town, thus endangering the economic growth of the city. However, the flow of cars is approximately the same and highest, in city settings, in between 30 and 70 km/h (see figure 2). One needs to consider that the flow-speed curve is different for each road and situation (width, density of cars...). Therefore, the very diverse conditions in cities make it very complex to establish one “optimal” urban speed with regard to car flow. (Dollfus, 2002; Lamure, 1998, page 130). All in all, decreasing car speed to 30 km/h leads to more attractive towns with the same number of cars flowing through.

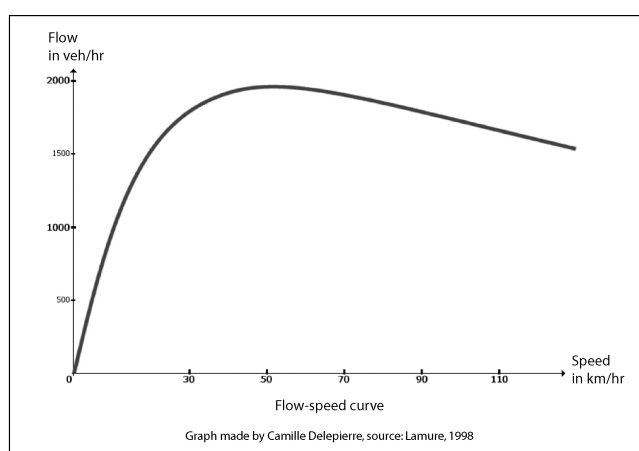


Figure 2: The flow/speed curve

2.1.4 The urban planning reasons

It may sound surprising but higher car speed doesn't lead to any “time saving”. In the 70's, Yacov Zahavi found out that in any city, the travel-time budget converges to an average of one hour meaning that individuals travel at least one hour a day to accomplish their activities⁸. Moreover, in any city, people tend to perform the same number of trips per day. Therefore, if car speed limits are increased, individuals (travelling the same number of trips and the same amount of time) will travel further; or live further from their activities leading in the long run to urban sprawl (Crozet, 2004; Wiel, 2006; Héran, 2007, page 3 + page 16-17 and Marchetti in Newman, 2007, page 71). In short, increasing SPEEDS clearly lead to urban sprawl⁹, which

⁸ The threshold exists only downwards, people can travel much more than an hour a day if they can't reach needed destinations faster.

⁹ At first, increasing car speed actually led to a necessary “city airing” as in 19th century cities were crowded and diseases spread fast leading to epidemics. The increase of transportation SPEEDS allowed at first more space and air in cities and better health. However, the city enlargement occurring today on a much larger scale is leading to many more disadvantages than advantages (Héran, 2007, page 6).

“imposes economic, social and environmental costs on society” (Burchell, in Litman, 1999, page 17) such as social segregation (Litman, 1999, page 13), increased air pollution and high energy and land consumptions¹⁰.

Increased car speed also leads to the decaying of proximity centres, as all jobs, shops and happenings concentrate in the main city centre (Wiel, 2006). But a network of proximity centres is necessary in a city willing to set up more sustainable system and transportation as it decreases the travel distances (Hagson, Ekman, 1996, page 7).

Higher speed leads to urban sprawl which is wrongly perceived as an access to cheaper housing in the periphery for low-income households; the price of the land being lower¹¹. Indeed, according to Héran (2007, page 6-9), when one compares housing + transportation costs in Paris (instead of comparing only housing costs) living expenses are similar for a household to live in the suburb or in the centre. This phenomena is even more relevant now with the ever increasing cost of gas; thus trapping low-income families compelled to have a car and spend a lot of money for gas as public transportation has low efficiency in low density suburbs.

Another reason to decrease car speed is that it eases traffic congestion. Indeed, higher car speed limits create more traffic (Cairns, 2002) and congestion. “Speed makes/creates traffic” and lower car speed leads to more fluidity (Wiel, 2007, page 109+112 and 2002, page 94). According to Wiel (2004), congestion is the result of confusion between urban and inter-urban traffic. Urban traffic should be slow and free (the urban area = the labour market area), inter-urban traffic should cost and be fast for a better economic development and city synergy.

The barrier effects are neglected, though they have a negative effect on pedestrians and bicycle travel conditions, through longer and more complex and dangerous trips (Héran, 2001). For instance a pedestrian might have to walk an extra kilometre to reach a destination because compelled to find the closest zebra crossing or bridge in order to cross a 70 km/hr road, though in a 30 km/hr zone pedestrians can cross anywhere, thereby able to take the shortest way to reach their destinations. Barrier effects are emphasised by higher car speed. On the contrary, roads with slower traffic will decrease the barrier effect.

¹⁰ According to the Millenium cities database (Baumstark, 2003, page 1), the less dense cities consume most energy, have a transportation system relying on cars which is costly for the society and have a costly public transportation system.

¹¹ Households underestimate the extra transportation costs (when living in the suburb, compared to when living in the center). And banks check the housing loan/income ratio (and not housing + transportation costs / income ratio) to give a loan permission (Héran, 2007, page 6-9).

2.2 Reasons not to decrease car speed in cities

Authors mentioned a few reasons not to decrease car speed. At first, perceived and proven wrong barriers such as the beliefs of time-savings or higher flow of cars with higher speed are first exposed; they could be overcome by better diffusion of knowledge. Then, the few relevant “actual” reasons not to decrease car speed such as disturbed public bus system are explained. They could be overcome by better knowledge. The internal reasons on technical and political grounds not to decrease car speed and finally “subjective” reasons are then described.

2.2.1 Perceived barriers

The perceived barriers are reasons that have been proven wrong in the previous section: higher speed would lead to higher flows of cars, less congestion, more “time-savings”, cheaper peripheral housing for low-income families and better liberal market conditions through larger choice. Two extra wrong perceived reasons are explained below.

Litman (1999, page 19) in his cost benefit-analysis of traffic calming, identifies vehicle delay as a cost. However, urban planning research shows that in the long run, localisation of housing, jobs and activities will adapt to the new city structure. Time won't be lost, because the need of transportation will have been decreased (see chapter one).

A lower car speed limit might increase car traffic on neighbouring roads; this phenomena is called “spillover” impacts. However, “shifting traffic from low-volume residential streets to high-volume arterial roads reduces external impacts, providing net benefits, although it may increase arterial traffic congestion.” Moreover, “most models tend to overestimate spillover impacts because they use fixed trip tables, that is to say they assume that the same number of trips will occur between zones regardless of travel conditions.” (Litman, 1999, page 20). Moreover, Cairns et al (2002) found out that individuals and trip tables are much more flexible than expected, and that traffic can actually disappear. They concluded that “in half the cases, over 11 % of the vehicles which were previously using the road or the area where road space for general traffic was reduced, could not be found in the surrounding area afterwards.” (Cairns, 2002, page 16). These findings support the concept that traffic supply leads to traffic demand; and lowering traffic supply lowers traffic demand.

2.2.2 Actual barriers

Buses have experienced increased travel times due to traffic calming measures; bus drivers complained about back pain and injuries, and passengers about discomfort (Hummel, 2002, page 7). However 30 km/h can not harm bus traffic if implemented in a “smart way” provided that they can drive 30 km/h, that speed bumps are “buses-adapted” and that mini roundabouts are avoided on the bus traffic lines. Buses also need to be prioritised all the way to the centre (Wendel, 2002, page 25-26). Emergency and service vehicles have a similar problem. “One study found out that speed humps and traffic circles can delay fire trucks up to 10.7 seconds per device.” However, “this increase is much smaller than differences in response times between residential areas” (Litman, 1999, page 20). Moreover, “the incremental risk to residents from fire truck delays is usually much smaller than increased road safety from traffic calming accidents reductions.”

Bicyclists can find traffic calming measures uncomfortable or even dangerous, “particularly where measures have high up stands” (Hummel, 2002, page 7). However, cycle use can be encouraged by improved routes and by-passes, through a traffic calming project. Motorcyclists can also find traffic calming measures dangerous for them, unless the area is designed carefully.

Socially, decreasing car speed will disadvantage the “captives” (car dependent people); because they cannot reach their destinations without a car (Ascher, 2003). However, jobs and housing locations will in the long term change so that captives can reach their destinations. And social programmes can minimise this side effect of decreasing car speed in the short term. The disadvantaging effects of low car speed limits on “captives” were only developed by one author. It emphasises that the point is unknown in academic world, though it appears to the author as a major “actual” motive not to lower car speed limits.

Most barriers can be overcome by better knowledge or better know-how.

2.2.3 “Internal” reasons

The national French transport research centre (CERTU) carried out a study in 1995 on 800 French cities with over 10.000 inhabitants where they asked local elected officials the reasons why they didn’t implement 30 km/h zones (Renneson, 2003, page 8-11). Indeed, in 1990, though French cities were legally allowed, they didn’t implement 30 km/h zones. CERTU recommending lower car speed limits, surveyed them to identify and tackle the barriers. The cities mentioned the lack of knowledge about the reasons to decrease car speed in institutions¹² as well as public opinion, the lack of know how, not a prioritised or

¹² 50 % answered that they doubted of the efficacy of a 30 km/h zone.

needed measure¹³ and the lack of opportunity (40 % of the answering cities mentioned it). Catia Rennesson carried out this survey. She is still working for CERTU in charge of decreasing car speed measures; she was interviewed about the current remaining barriers to 30 km/h zone implementation in France. According to her, since 1995, the lack of knowledge has been overcome; she considers the lack of know-how as the remaining barrier.

Wiel (2002, page 112) mentions the lack of public debate on the decrease of car speed and mobility issues, leading to ignorance or wrong knowledge about lowering car speed limits and the positive and negative effects brought by the policy.

Fear by local elected officials was mentioned by Pharoah (1993, page 5) as a barrier. Decision-makers are scared to implement a policy with uncertain results even more if they know it has failed elsewhere. Pharoah (1993, page 5) also mentions that the absence of implementation of car speed decrease might be due to poor city managing. He insists on bad communication between street engineering and urban landscape departments within the city preventing low car speed decisions to be taken.

Cities struggle with the national law system when they implement innovative measures¹⁴. But, since 30 km/h zones aren't a new measure anymore, cities can legally implement them since 1990 in France and since 1998 in Sweden. However, if a city is willing to implement an innovative low car speed measure, some national laws might then be lacking.

2.2.4 Subjective choice

The following three reasons are subjective choices on matters that extra knowledge doesn't automatically solve. They depend on the subjective understandings and personal visions on urban transportation and sustainability.

Higher car speed would lead to higher productivity

Prud'homme (in Héran, 2007, page 6) states that higher car speed increases productivity by 10 % and production by 3 %. The French economist J.Poulit (in Héran, 2007, page 5) explains that the larger the city is, the higher the productivity and the salaries are. According to Prud'homme, this is due to a larger employment market, where supply and demand can adjust better, i.e. where each worker has more opportunities to find a job suitable to his capacities. However, it isn't clear how much economic growth is relying on high speed policies; moreover the disadvantages are numerous and can be considered more

¹³ 50 % improve traffic safety through other measures, 40 % first wanted to work on the classification of streets and define the car speed to be enforced and 70 % of the answering cities said they didn't feel the need to decrease car speed.

¹⁴ In 1990's, in Graz Austria, 30 km/h was implemented in the whole city except the main roads (50 km/h). Graz implemented 30 km/h zone before it legally existed. The city mentions national law as an obstacle to easy implementation.

important than the economic growth benefits. Researchers such as Wiel or Hérán however completely disagree with such thinking. As mentioned earlier, high car speed *between cities* may be enhancing synergies between cities and supporting economic development. But the benefits from higher car speed are marginal within cities; the disadvantages being superior to advantages (Wiel, 2002, page 94 and 2006, page 10).

Growth or equality, as a priority?

Do we want more accessibility for all, as well as increased inequalities in accessibility; or is the decrease of inequalities to be prioritised? This ethical question is also asked when considering economic growth in general. Should we accept an economic growth for all – even the poorest – that increases inequalities too, or should we consider inequalities as a major aspect to tackle?

Will lower car speed limits prevent urban sprawl and even densify cities?

Urban planners are debating about the effects of a decreased car speed on urban sprawl; indeed researchers don't know if lower car speed limits will lead to re-densification of cities through a “reversed” urban sprawl process. Indeed urban sprawl might have other strong driving forces than high car speed (Ascher, 2003, Massot, 2007, Pfeleger, 2007, Vitorge, 2006¹⁵).

Literature has brought forward many positive effects of low car speed with few negative side-effects. At the social level, improved traffic safety, health, social life and accessibility and less social segregation and social inequities are the main positive effects. Literature shows fewer emissions per single car as well as fewer circulating cars and decreased noise pollution as the environmental positive effects. Authors mention less public transportation costs and positive effects on retailing. At last, lower speed limits were proved to lead to less urban sprawl and congestion and no time saving, whereas high car speed limits to the destruction of proximity centres networks.

Literature revealed a number of “wrong” perceived barriers regarding relations between speed and flow, cheap housing or spillover effect that can be dealt with through better knowledge. “Actual” barriers such as disturbance of the bus travel times and comfort, bikers and motorcyclists safety and “captives” were also stated, they can be dealt with through “smart” implementation. “Internal” barriers belonging to the political science and organisational fields such as lack of knowledge, not a prioritised measure, lack of know-how, political fear, lack of opportunity, national laws were mentioned. At last, the subjective choices depending on the transport and sustainability vision that the city leaders have were explained.

Despite of numerous positive effects of a decreased car speed with few negative side effects, few cities have implemented low car speed policy on large scale. The next section aims at understanding why.

¹⁵ The city of Grenoble, in France has decreased its innercity rapid roads from 110 to 70 km/h to limit urban sprawl; their experienced is referred to as chrono-planning (“chrono-aménagement”). Results and conclusions will be seen in a few years.

CHAPTER 3: FIELDWORK FINDINGS

ACTUAL DRIVING FORCES AND BARRIERS TO THE DECREASE OF CAR SPEED IN LUND, MALMÖ AND LILLE

Chapter two concluded that decreasing car speed has mostly positive effects and that the few “negative effects” can be overcome. However, very few cities have implemented large scale low car speed policies. Using data collected from interviews and official documents, the purpose of this chapter is to answer the following questions. On what grounds are cities decreasing car speed, or not? Why are Lille, Lund and Malmö implementing low car speed strategies, and which barriers did and do they meet?

3.1 General findings about the three case-studies

The following section clarifies the three case-studies general transportation features and initiatives in low car speed, so as to understand further findings.

With 1.1 million inhabitants, Lille Urban Community – **LMCU**- (see glossary) is the 4th French city in size. Located in Northern France, it gathers 85 municipalities that have chosen to transfer transport, housing and business powers to LMCU. It levies a business tax and receives state subsidies according to the number of inhabitants. LMCU finances transportation projects and has most transport powers, though municipalities still legislate about car speed limit on their territory. LMCU adopted in 2000 an overall transport strategy as well as a car speed plan, as the state law imposes. Today, over eighty 30 km/h zones have been created and more are on the way. LMCU low car speed strategy is effective, but costly. Indeed, rather expensing means such as improving the urban environment and physical measures are used to lower car speed. **Lund** is a 100.000 inhabitants’ Swedish city situated in Southern Sweden. Sweden is one of the safest countries with regard to traffic safety with seven deaths per 100,000 inhabitants and has a “zero Vision” national goal since 1997. This national target aims at zero death on roads. Lund had already in 1998 politically and technically agreed on a car speed plan, though there isn’t any state requirement in Sweden. The same year, the whole central area was turned into a 30 km/h zone. Today, half of the residential areas have been switched to 30 km/h zones; the other half switched little by little. **Malmö**, also situated in

Southern Sweden, gathers 280.000 inhabitants. It has only created two experimental 30 km/h zones in Sibbarp and Kirseberg. Malmö is currently implementing a 40 km/h zone trial; the whole city speed limit may be lowered to 40 km/h depending on the evaluation results. Interviewees in Lund presented rather likely that the whole city's car speed limit would be lower rather soon to 40 km/h instead of 50 km/h. With regard to traffic safety, Malmö has the highest death and severe injuries rates in Sweden. The city doesn't have any car speed plan and doesn't seem to plan to design one. A politician explained that the adequate car speed limits may vary along time; hence, according to him, it isn't relevant to take a steady political decision about it. Civil servants did propose a detailed car speed plan which wasn't politically validated. Malmö does have a traffic and traffic safety strategy, which advocate, as a general statement, a car speed limit appropriate with the urban environment. The following table develops data on each city.

	Lille Métropole Urban Community (LMCU)	Lund	Malmö
Geographical location	Northern France	Southern Sweden	
Number of inhabitants	1.100.000 inhabitants (4 th largest French city)	105.000 inhabitants	280.000 inhabitants (3 rd largest Swedish city)
Area and inhabitants/km²	600 km ² 1.800 inhab/km ²	400 km ² 260 inhab/km ²	150 km ² 1.800 inhab/km ²
Structure of the city	Densely populated region and city	Medieval centre with narrow streets	City build for car with large streets
Institutional situation, powers and finance	<p>Lille Métropole Urban Community gathers 85 municipalities that have chosen to gather and transfer some of their powers to a higher institution in order to manage specific issues.</p> <p>LMCU is in charge of transport, housing and business. In terms of transportation, the municipalities only keep the police power (deciding the appropriate speed and putting up signs).</p> <p>LMCU levels a business tax and possibly other taxes transferred from municipalities, and receives a state subsidy (according to the number of inhabitants).</p> <p>LMCU has therefore many urban planning powers and finances transportation measures, but cannot legislate about car speed limits itself.</p>	Swedish municipalities are financed by income tax and real estate tax.	
Social and political situation	<p>LMCU is steered by an indirectly elected council (like the American system). The 85 municipality mayors vote among each other a president and vice-presidents. French urban communities are being attributed more and more power; this system leads to less and less democracy.</p> <p>LMCU was always steered by a socialist mayor. Northern France had an economical and social crisis due to the crash of coal mining and textile industries from the 60's to 80's.</p>	Every 4 th year, Lund's council is elected. Lund has been a wealthy and conservative municipality until 1980's. Since then the council has been switching between blue majority (moderaterna) and red-green (social democrats and environmental party) majority.	Every 4 th year, Malmö's council is elected. In 1980's, it switched several times between blue and red-green majority. Since then, social democrats have been in power. Malmö is an old industrial city with a large immigrant population experiencing important social transformation.

	Lille Métropole Urban Community (LMCU)	Lund	Malmö
Transportation modal share (% of trip made by)	50 % by car 30 % by foot 10 % by public transport 2 % by bicycle	40 % by car [55 %] 40 % by bicycle and foot [15 %] 20 % by public transport [30 %] % by no of trips [% by km]	50 % by car 30 % by bicycle 15 % by public transport
Traffic safety (number of deaths and severely injured involved in traffic accidents) ! <i>Severely injured people may have a different definition according to the city. Data may not be comparable.</i>	30 deaths 130 severely injured <i>(per year average 2002-2006 data)</i> <i>Severely injured = spent more than 24 hours in hospital</i>	4 deaths 50 severely injured <i>(in 2006)</i> <i>Severely injured is defined by the police and isn't clearly defined.</i>	14 deaths 380 severely injured <i>(in 2005)</i> <i>Severely injured isn't clearly defined.</i>
Car speed strategy plan	In 2000, LMCU adopted an urban transportation plan, as required by state law. It has two appendix on car speed: a low car speed development plan (a map with advocated speed) and low car speed charter with guidelines. In order to decrease car speed, LMCU advocates the switch of the urban visual environment to reach lower car speed. Trying to decrease car speed only through speed limit signs isn't recommended by CERTU. This strategy has proved effective though costly.	Lund adopted an environmental-friendly transportation plan called LundaMats in 1996, without any state requirements. In 1998, Lund adopted a car speed plan following the national guidelines "Lugna Gatan".	Malmö doesn't have a car speed plan and doesn't plan to have one. One was designed by civil servants but wasn't approved by decision-makers. However, Malmö already had in the 90's a traffic safety plan and updated it recently. Kirseberg and Sibbarp are two experimental 30 zones, implemented many years ago. In a central area, Malmö is implementing a 40 km/h trial. The whole city is planned to be decreased to 40 km/h. Malmö's main low car speed strategy is to use car speed limit signs, building very few physical measures.
Car speed initiative	LMCU has created a 30 km/h zone in each of the 85 municipalities, thanks to financial help. However, 60 % of the LMCU network has been advocated to be 30 km/h. Much more 30 km/h zones have to be implemented. Lezennes (one of the 85 municipalities) is the first French municipality to implement 30 km/h in the whole municipality. It is considered as a French success story. LMCU is nationally ahead in terms of car speed initiatives; it is willing to decreasing the motorways' speed to 115 km/h, though they are owned by the state which refuses the decrease.	In 1998 Lund central area decreased its speed limit from 50 to 30 km/h. It is currently gradually decreasing all residential areas speed limits to 30 km/h. However, the car speed in central areas was already low because of medieval structure of narrow streets.	Malmö has implemented two experimental 30 km/h zones in residential areas (Sibbarp and Kirseberg) with few physical measures (only speed limit signs). They are partly considered as failures because the speed limit isn't respected by drivers. Malmö currently experiences a decrease of speed from 50 to 40 km/h in central area zone. The project is led by the Swedish Road Administration (Vägverket) and applied in a dozen Swedish cities. The implementation only includes new car speed limit signs.

	Lille Métropole Urban Community (LMCU)	Lund	Malmö
French and Swedish car speed history (the main decisions)	<ul style="list-style-type: none"> - 1899: 20 km/h limit in cities, 30 km/h outside cities - 1954: 60 km/h in cities - 1973-74: 90, 110, 130 limitations established - 1990: 50 km/h in cities and 30 km/h as zones are possible 	<ul style="list-style-type: none"> - 1907: 15 km/h daytime, 10 km/h night time - 1923: 35 km/h in cities, 45 km/h outside cities - 1936: free speed - 1955: 50 km/h in cities - 1971: 30, 50, 70, 90, 110 limits established - 1998: 30 km/h as zones established - 2008: 30, 40, 50, 60, 70, 80, 90, 100, 110, 120 established 	

Table 1: Presentation of the 3 case-studies

Source: data from interviews carried out in all three cities as well as official website www.lund.se, www.malmo.se, www.cudl-lille.fr

3.2 The actual driving forces

This section will answer the question: what are the driving forces which favour the decrease of car speed, in practice? It uses data gathered from interviews with civil servants and decision-makers in Lille, Lund and Malmö. As some interviewees requested that their names and words shouldn't be explicitly written, names aren't mentioned.

The findings are sorted in three categories: theoretical reasons, features that the city can and cannot act upon. The driving forces that were mentioned in several case-studies are: the city structure and institutional tradition, the improved traffic safety and urban environment, a politically validated speed plan, the civil servants/local elected officials teamwork quality, the political courage and resident's will. Some reasons were only mentioned once: political consensus knowledge, project logic and coherent financing, good city management, power municipalities, close successful examples, theoretical knowledge and political stability.

Some interviewees mentioned theoretical motives to decrease car speed.

Improved traffic safety and urban environment

All cities mentioned the main theoretical reasons to decrease car speed, i.e. improved traffic safety and urban environment. Kirseberg, a residential area in Malmö was the first area to become a 30 zone, because a pedestrian-child was killed in a car accident.

No time losses or increased car flow with higher speed

A decision-maker in Lille mentioned that decreasing the car speed to 30 km/h leads to negligible time losses. A civil servant in Lille explained that the city hall could decrease car speed because its most of its traffic planners had understood that car flow wasn't higher at 90 km/h than at 50 km/h.

Driving forces that cities may not be able to influence in the short term.

Structure of the city

Interviewees in Lund mentioned that the medieval centre, with narrow streets, naturally imposed low speed to car drivers. This allowed the whole area to be rather easily turned into a 30 km/h zone. A local elected official in Lille mentioned the village network of Lezennes municipality as a reason why it was also easily transformed into a 30 km/h zone. Indeed, the municipality of Lezennes is surrounded by bypasses linking several main destinations of Lille urban community. Car drivers chose to speed through Lezennes rather than to use bypasses. Due to city structure, measures needed to and could be implemented to discourage car drivers. Kirseberg, north-east residential area in Malmö, was also turned into a 30 km/h zone thanks to its appropriate structure, i.e. few access roads. Malmö's city structure was also mentioned by interviewees as a barrier to low car speed. Indeed, the large roads in Malmö have favoured large car flows and speed for decades; and complex and costly structural modification have to be designed and implemented to lower the car speed.

City's institutional tradition and interest in sustainable transportation

Interviewees in Lund stated that inhabitants and decision-makers have long been interested in transportation and environmental issues. A civil servant mentioned that Lille was one of the first French cities to initiate car speed reducing measures such as radars and speed bumps in the 1980's. Lille and Lund have been low car speed forerunners, are known to be and are expected to lead in sustainable transportation issues. They have a sustainable transportation institutional tradition and interest. A decision-maker in Malmö explained that the city has, on the opposite, a tradition of maintaining the current system, lacking visions for the city. According to him, this "attitude" might have prevented the city from decreasing car speed initiatives.

Close successful examples

A civil servant mentioned the geographical situation of Lille between the Netherlands and the United Kingdom, who implemented successful low car speed measures, as a potential driving force. Successful examples in the neighbouring municipalities were also cited as a driving force.

Political stability

In a city if the political majority switches, decision-makers can be afraid that the car speed decrease measure they implemented will be taken away by the next decision-makers in power. A civil servant in Malmö mentioned political stability as a positive asset to reach a low car speed policy.

Large powers to municipalities

The decentralisation process, which occurred in 1980's in France, giving more powers from the central national government to smaller authorities such as municipalities and urban communities, was mentioned as a driving force by a civil servant in Lille. This point illustrates the subsidiarity principle, which supports that issues are easier and faster implemented if they are handled by the closest and lowest competent authority.

Some interviewees mentioned driving forces that can enhance.

A speed plan validated by city officials

Lund and Lille civil servants designed a car speed plan validated by the municipal council respectively in 1998 and 2000, whereas Malmö hasn't. They carried out road classification studies in order to establish a desired car speed according to the street functions and users and the car flow. Though the speed plans aren't binding, they both lead today to a much easier and smoother low speed implementation.

Both French and Swedish national laws and guidelines helped the car speed plan to be produced. French cities over 100.000 inhabitants have to, according to state law, design a comprehensive transportation plan including a low car speed strategy. And Swedish cities have been inspired since 1997 by the "zero Vision", a national goal aiming at safe traffic with zero death, and supported by the "Lugna gatan" (calm streets) national guidelines with its technical advice.

Despite the Swedish national guidelines, elected city officials in Malmö rejected a car speed plan proposed by civil servants. Rolf Paulsson, former city vice-councillor in Malmö, disagreed with 30 km/h as a desired car speed on most roads. Civil servants mentioned that he and other local elected officials feared that residents would refer to the document to demand a low car speed on most streets. It induced tensions between civil servants who had carefully designed the plan and thought that it should be enforced.

Quality of decision-makers' and civil servants' teamwork

Interviewees in Lund and Lille¹⁶ described trusty relationship and smooth decision processes between the concerned technicians and the elected officials in charge as a key factor to the implementation of the low car speed policy. In Malmö, the teamwork about car speed issues appeared uneasy to the author.

Good communication within city hall's departments

A civil servant in Lille mentioned good communication between city departments (urban planning and traffic) as a driving force to low car speed implementation.

Political knowledge to reach consensus

A decision-maker, in Lille, explained how he reached consensus on decrease car speed policy. He advised to introduce the policy as an experiment rather than as a definitive decision, try to concede and push for consensus.

Political courage and resident's will

Local elected officials from all cities recalled their determination and courage as an important driving force. Civil servants in Lund and Malmö mentioned residents as a specific driving force to implement 30 km/h zones. Residents had contacted civil servants to demand lower car speed limits near their homes. This local support acts as a tremendous driving force to start the implementation process (information campaign, feed-backs from residents, interest by the press and local TV channels).

“Project logic” and coherent financing

One decision-maker in Lille mentioned the “project logic” and coherent financing as a major driving force. Indeed, technicians and local elected officials find more motivation in working with meaningful and coherent large projects than in taking care of streets one by one without any consistency.

3.3 The actual barriers

This section will answer the question: what are, in reality, the barriers to the decrease of car speed? It uses data gathered from interviews with practitioners and decision-makers from Lille, Lund and Malmö.

¹⁶ In Lille, Marc Godefroy (decision-maker) and Jean-Louis Schier (civil servant) are friends and decided to decrease car speed in Lezennes during a private dinner.

The findings are sorted in categories: perceived wrong barriers that can be overcome by better knowledge, actual barriers that can be overcome by “smart” implementation, political barriers and subjective vision barriers. The barriers that were mentioned in several case-studies are: political fear, decreasing car speed being a minor issue, lack of know-how, costs in money and time, bus and emergency vehicle systems, car lobby, car drivers and complex regulations. Some reasons were only mentioned once: traffic engineers wrong knowledge about car flow and speed, non-respected new speed limits, politicians that are car drivers, the “Only In My Back Yard” phenomena, some who built have to un-build, shop keepers lobby and the feeling that city life and dynamism can't survive without a car along the sidewalk.

Some interviewees mentioned perceived and wrong barriers

Insufficient knowledge of traffic engineers

Civil servants in Lille mentioned national traffic engineers from the French Ministry of Facilities as a barrier. Indeed, they put a spoke in LMCU's wheel which was trying to implement low car speed initiatives. Some local traffic engineers were also mentioned to have the archaist belief that high car speed leads to high car flows. However, most of national and traffic engineers have now acquired knowledge about low car speed and its benefits.

Myth of costly low car speed policy

Civil servants in Lund and Malmö mentioned the high costs of low car speed measures as a barrier. However, CERTU (French transport research centre) explains in its guidelines that though traffic calming schemes can involve urban aesthetic improvements with large costs, they can also be implemented through cheap measures such as restoring priority to vehicles coming from the right, alternated car parking lots or chicanes.

Car speed limits numerous switches lead to car driver confusion

A decision-maker explained that Malmö wasn't decreasing car speed because constant changes of car speed limits would confuse car drivers. However, “Lugna Gatan” (calm street) Swedish guidelines advocate the opposite (50 km/h streets with lowered car speed limits at crossings when necessary). This barrier would be solved by better knowledge of national guidelines.

Some interviewees mentioned actual barriers.

Most of the actual barriers can be overcome by “smart” implementation of traffic calming schemes.

Disturbed bus and emergency travel times and comfort

Civil servants in Lille and Lund mentioned the decreased bus comfort and commercial speed as a motive for not implementing lower car speed limits. For instance, a decision-maker in Lille mentioned that Transpole, the public transportation company in Lille, threatened to cancel bus lines through Lezennes if the local municipal council implemented a general 30 km/h speed limit in the whole town. Though an agreement was eventually reached, it shows how reluctant some bus companies are when they face such a policy. However, civil servants also explained that specific bumps can be built not to decrease the effect on buses. The same concerns have been brought up in Sweden and great efforts have been made to investigate the best design for public transport.

Civil servants in Malmö mentioned emergency vehicles being slowed down by traffic calming measures. However, this reason was minimised in the chapter two (see page 23).

Violation of new car speed limits

Civil servants in Malmö mentioned that car drivers violating new car speed limits in the experimental 30 km/h zone areas as a reason not to implement lower car speeds anywhere. However, car speed can be efficiently put under control with physical measures such as chicanes or restored priority to vehicles coming from the right. The actual barrier seems to find its origin in the lack of know-how or insufficient political willingness by local elected officials.

Lack of know-how

Catia Rennesson is in charge of low car speed research at CERTU, (French national transportation research centre); she stated that the lack of know-how was the remaining major barrier for French municipalities to take the decision to decrease car speed.

A civil servant in Malmö mentioned lack of know-how as a barrier as well. The city has experimentally implemented two residential 30 km/h zones which are considered failures because car drivers don't respect the speed limit signs. However, physical measures can very easily and effectively decrease car speed. Malmö has built little physical measures; it could be due to the lack of know-how, political will or to the lack of financing.

Complex national regulation

A civil servant in Lille mentioned that the French regulations (published by the Ministry of Facilities and Sustainable Development) acted as a barrier to the implementation of low car speed zones. This parameter cannot be acted upon by the city or by the Region

Implementation is a long process

A civil servant in Lille mentioned that implementing the advocated car speed limits is equivalent to remodelling 2.500 km of city streets and roads. The lifespan of street pavements being around 50 years, the change will come slowly.

Opposing groups to low car speed were mentioned by interviewees.

They emphasised the unpopularity of low car speed policies which make the decision of local elected officials much more difficult. The following stakeholders' positions are all stated by a stakeholder about another's opinion; they may be wrong perceptions of others' opinions. Extra interviews may be carried out in further research to check the reliability of these barriers.

Shop keepers lobby

Decision-makers in Lund and Lille stated shop keepers' organisations as powerful barriers to the decrease of car speed in city because they disapprove anything preventing maximum car flows and car parking. However, civil servants in Lund and Lille had opposite views.

This reveals wrong beliefs about other stakeholders' reason and opinions. It could be improved by better knowledge of low car speed effects and meetings and debates involving various stakeholders for them to clarify their position to all.

The car lobby and car drivers

Decision-makers in Lille and Lund mentioned the car lobby as a barrier to the decrease of car speed. The car lobby often introduced as the main support to our "countries on wheels" appeared as a "legend" or rather blurry concept during interviews. When asked about it, interviewees couldn't provide specific facts about it.

Decision-makers in Lille mentioned "grumpy" car drivers with whom they had to deal with, when preventing car use and favouring low car speed. Interviewees in Malmö emphasised car drivers' acceptance of the new car speed limits; a balance is to be found between new rules and the car drivers' response. In that regard, a 40 km/h speed limit is acceptable for car drivers and decision-makers whereas up to now, a 30 km/h speed limit is rejected.

Residents with the OIMBY phenomena

A local elected official in Malmö stated the “Only In My Back Yard” attitude, as a reason not to implement low car speed limits. Indeed, most residents want to lower car speed limits only in their neighbourhood; they want to drive fast anywhere else.

One specific person opposing

In Malmö, the former vice-councillor in charge of traffic issues in Malmö, Rolf Paulsson, rejected the car speed strategy proposed by civil servants. It may have prevented Malmö from decreasing car speed.

Political reasons why car speed wasn't decreased were mentioned.

Political fear

Local elected officials and civil servants, in all three cases, mentioned political fear as a main barrier¹⁷. Indeed, during the last decades, cities have prioritised cars; taking reverse actions, such as low speed limits or prohibiting cars from town centres, isn't an easy political decision as inhabitants (and voters) may be displeased in the short term.

Absence of political willingness

A civil servant mentioned that decision-makers in Malmö are middle-aged men driving cars. As they drive cars themselves, they benefit from the automobile city and don't support decreasing car use and speed policies.

Is reducing car speed a non-issue?

On several occasions, reducing car speed appeared like an uninteresting measure and as a “non-issue”, i.e. bringing no benefits to run again for the elections. The fact that civil servants and decision-makers weren't always clearly in charge of decreasing car speed measure emphasises the non-issue argument. According to the author, it may be one of the main barriers to implementation of low car speed limits.

When asked about the decrease of car speed issues in Lund, a decision-maker answered that “we choose where we want to fight”, meaning that this specific issue wasn't his/hers.

¹⁷ Solveig Persson Ekström (former chairman of the technical committee in Lund in the 1990's) mentioned that when Lund was deciding to decrease car speed to 30 km/h in the centre, many politicians from the opposition were scared of the reaction of the public opinion (and the voters) as well as the effects of a decreased car speed; they rather wanted to implement 30 km/h street by street than as a zone.

Some mentioned subjective choices that rely on personal city visions.

We have done enough for now.

Interviewees in Lille and Lund mentioned that their cities might have already been decreasing car speed enough; no technical reasons being left to decrease car speed at the moment. A civil servant in Lille mentioned that the Swedish “zero Vision” national goal, aiming at zero death due to traffic accidents could become a French political goal soon, so that further decrease of car speed would be needed.

Cars, necessary to urban life

One civil servant stated that some decision-makers believe that cars are necessary to urban life. They disapprove lower car speed limits as it would lead to a “dead” city. This must be regarded as an attempt at finding arguments for their personal preferences towards cars and speed.

Interviewees mentioned some theoretical motives to decrease urban car speed: improved traffic safety and urban environment, absence of time gain, higher car flows at higher speeds. They mentioned other features that cities can't influence in the short term: the structure of the city and its institutional interests, close successful examples, powerful municipalities and political stability. Cities may however influence several features: improved quality of decision-makers/technicians teamwork and good communication links between city departments, politically validated car speed strategy, residents' willingness, project logic and coherent financing.

Interviewees expressed many barriers to the decrease of car speed. They mentioned wrong “perceived” barriers about among others the costs or the relation car speed/flow that can be overcome by better knowledge. Interviews revealed actual barriers such as disturbance of public bus and emergency travel times, lack of know-how, non-respected low speed limits complex national regulation and long process. These actual barriers can be overcome by “smart implementation”, better know-how and national regulations' simplification. Wrong knowledge and perception of other stakeholders' opinions lead to the perception of many groups against low car speed policy, such as shop keepers, car lobby and drivers or residents. Such unpopularity of low car speed leads to difficult low car speed political decisions. The last barriers are political and include political fear, lack of political will or interest.

CHAPTER 4: DISCUSSION

This chapter aims at having an overall approach of the results stating limitations, comparing findings and answering research questions.

4.1 Findings' limitations

On several occasions, interviewees might have been “promoting their own cause”. For instance, all decision-makers stated “good and brave” local elected officials as a driving force to decrease car speed in cities; thereby flattering themselves and pattering their own backs. Similarly, civil servants mentioned that increasing budget was necessary to decrease car speed. They seemed to be “using” the author as a spokesperson and the research as a way to claim their needs; prioritising this process over really trying to answer the question

Some questions brought back to the front ten years old events such as Lund’s centre turned into a 30 km/h zone. Interviewees either had forgotten the facts or weren’t working for the city of Lund at the time. Information sometimes differed from one interviewee to the other. This is why the author asked the interviewees the same questions about the same events and checked the answers in official documents when possible.

Interviews were carried out in French, Swedish and English. French interviews were the easiest as both interviewee and author were speaking their mother tongue. In Swedish and English, some communication troubles occurred when specific technical terms were unknown by the author and interviewees. Therefore, the author used a specific road transport dictionary. These language miscommunications can be seen as a limitation; however extra care was given to data validation through probing questions and email confirmation.

Fieldwork guidelines aimed at neutrality. However on several occasions, interviewees might have shown a bias. Being aware of the status and position of the interviewer, they often referred to urban air pollution levels, probably assuming that the interviewer wanted to hear about local environmental issues, though they knew the scope of the research was much broader. Explanations were then given on the holistic topic to broaden the focus again. This limitation could also explain why, quite often, the interviewees talked more willingly of social, political and organisational driving forces, putting back the request for hard facts.

4.2 Comparing interview's and theoretical findings

This section will answer the following question. Do interview findings confirm the literature driving forces and barriers?

Though the theoretical and fieldwork's research questions were similar, they led to very different findings. The second chapter and theoretical approach answered the following question: What theoretical reasons can explain why a city should or shouldn't decrease car speed within its limits? The third chapter and fieldwork answered the following question, using Lille, Lund and Malmö as examples: On what grounds are cities decreasing car speed, or not?

Concerning driving forces, literature review (chapter two) mostly brought up "hard facts" driving forces which can be measured rather easily through quantitative indicators such as traffic safety, noise and air pollution or shop turnover rates. "Soft" driving forces such as political or organisational reasons weren't mentioned at all in the articles reviewed. Interviewees however mostly answered "soft facts", as driving forces, such as quality of teamwork between technicians and decision-makers, good communication between city departments or city's institutional traditions.

With regard to barriers, literature review only revealed a few. Only few authors mentioned reasons why low car speed limits aren't implemented. However, interviewees mentioned many barriers from actual barriers and political issues. They also mentioned wrong theoretical reasons not to decrease car speed, thereby showing that they lacked technical knowledge and know-how on low car speed effects.

All in all, an important finding of this research is that theoretical findings and fieldwork findings differ. Literature didn't emphasise "soft" facts such as political and organisational driving forces or barriers, though interviewees did. On the other hand, civil servants and local elected officials need to improve their theoretical knowledge about low car speed effects.

4.3 Comparing answers from civil servants and decision-makers

It was remarkable and expected that decision-makers had less interest and knowledge about low car speed policies.

Moreover, their answers clearly differed on one issue: the shop keeper's attitude and economic development. In all three cities, civil servants stated that shop keepers were not a barrier to the decrease of car speed; they did care about measures affecting parking lots but not about high or low car speed. Whereas

local elected officials supported exactly the opposite: economic development and shop keepers act as a “barrier” to the decrease of car speed. Specifically in Lille, a civil servant stated that the president of the Chamber of Commerce favoured, above all, a ban on cars in the central square in Lille; a point of view on which a local elected official strongly disagreed.

All in all, an important finding of this paper is that stakeholders can have wrong perception of each others' opinion. Setting up a meeting on low car speed policies gathering civil servants, local elected officials and shop keepers and residents representatives would make clear every stakeholder's point of view. It would also lead to a better knowledge of low car speed positive effects in cities, as well as spread the know-how. Reliable surveys of public opinion¹⁸ would clarify the residents' actual opinion on policies.

4.4 Actions that can be taken to facilitate the process of reaching car speed policy

This section gathers from driving forces and barriers revealed in interviews, the actions that cities can influence in order to reach low car speed policy. According to the author, actions mentioned hereunder may improve the city management as a whole, as well as the decision-making process. It may also lead to more goals and strategies improving urban environment and city life.

Improving knowledge on low car speed effects

- Setting up information campaigns targeted towards residents and shop keepers aiming at increasing the knowledge of positive effects brought by decreased car speed
- Proposing educational programmes for technicians and decision-makers to increase knowledge of the positive effects of decreased car speed such as reduction of public expenses or lower air and noise pollution levels
- Visiting neighbouring successful low car speed projects

Better know-how

- Financing programmes to improve teamwork between civil servants and decision-makers as well as teamwork between city departments

¹⁸ Another strong example is Lund. When turning the whole central area in a 30 km/h zone, local elected officials were very afraid of residents' reaction. However, a local newspaper carried out a survey on inhabitants and concluded that most residents were in favour of the 30 km/h zone. Moreover, after implementation of the zone, most were satisfied and very few complained. This experience in Lund allowed local elected officials to switch from wrong to right perception of the public opinion about low car speed measures.

- Organising meetings with civil servants, decision-makers, shop keepers, residents to avoid wrong perceptions of stakeholders' opinions
- Using national guidelines concerning low car speed projects
- Implementing low car speed policies through physical measures (and not only signs), at least in the beginning¹⁹
- Bringing in new technical solutions
- Focusing on a car speed strategy meeting clear political and technical requirements, thus easing the future small scale car speed decisions and implementations
- Implementing low car speed in a "project" logic avoiding as a "street by street" strategy
- Increasing the city budget for traffic safety and quality of urban life
- Having simple national regulations to enforce 30 km/h zones or pedestrianisation

4.5 Answering research questions in short

1. What theoretical reasons can explain why a city should or shouldn't decrease car speed within its limits?

All in all, literature revealed many positive outcomes from low car speed policies such as improved traffic safety, decrease of air and noise pollution levels, increased turnovers for shop keepers, lower public expenses due to less costly infrastructures. A few negative side-effects like disturbance of bus traffic, the number of "captive" persons, arose. They can be overcome by "smart" implementation.

2. On what grounds are cities decreasing car speed or not?

The main driving forces, found through fieldwork, can be summed up. A politically validated speed plan based on teamwork between civil servants and decision-makers and a good communication system between city departments is essential. Good theoretical knowledge of low car speed effects is also a must. The residents' willingness and acceptance of new speed limits will be only obtained if the goals and implementation of the new policy are made clear thanks to extensive communication at all levels. Interviews also revealed many obstacles: wrong beliefs of other stakeholders' opinions, political fear and ignorance, and

¹⁹ Non-respected car speed limits can be solved decreasing car speed through "physical measures strategy", that is to change the urban environment so that the car drivers feels like slowing down, instead of "signs strategy" that consists in decreasing car speed limit by only putting lower car speed limits signs.

According to the author, cities have been favouring high car flows and speeds for decades and car drivers, familiar with the current situation, have been "mis-educated" into driving fast and being most often prioritised. They won't start driving slower spontaneously. This concept belongs to the structuralist school of thoughts in urban planning. It states that urban environments strongly affect car drivers' behaviours. Therefore, according to the author, car speed needs to be decreased by physical measures at first until car drivers are "re-educated" and adopt automatically slow driving in urban environments.

wrong knowledge leading many groups to oppose the policy. An important finding of this paper is a major barrier: low car speed isn't an issue at all in cities, even considered less important than building new roads.

3. Do interview findings confirm the literature driving forces and barriers?

Literature and interview findings are hardly comparable because they answered the following slightly different questions that led to very different answers: What theoretical reasons can explain why a city should or shouldn't decrease car speed within its limits? And on what grounds are cities decreasing car speed or not?

However, it can be concluded that literature didn't develop "soft facts" such as political and organisation driving forces and barriers; while civil servants and decision-makers lack some theoretical knowledge of low car speed effects.

4. How is low car speed launched as a strategy? On this specific issue, what is the decision process? How do such issues end up on the political agenda?

Civil servants prepare and propose policies and strategies that local elected officials discuss, amend and validate. Civil servants also manage the implementation and details. One civil servant in Lund explained that local elected officials should only focus on and validate overall strategies, and shouldn't get involved in the details. If decision-makers quibble over details, the decision-process becomes inefficient. Thus, good teamwork between civil servants and decision-makers is a crucial issue.

5. Who owns the question of car speed decrease? On whose shoulders is the low car speed policy laying?

There is seldom one civil servant who is clearly in charge of the low speed policy. On the contrary, knowledge and data are scattered in several departments and interviewees. Thus, the first task of the author was to gather this "scattered" knowledge. This was the first evidence showing that low car speed policies did not arouse much interest and may be considered as a "non issue".

6. Finally, could civil servants, as knowledgeable stakeholders be considered a driving force to implement measures to reduce car speed in cities?

In such a situation - low car speed in cities, a non issue - any civil servant or city elected official strongly willing to work on low car speed policies can be a major driving force; whereas an individual strongly opposing low car speed policies will also affect the city's strategies. For instance, Mr Rolf Paulson (former vice-councillor in Malmö) strongly opposed the car speed plan in Malmö, preventing the validation of a proposed car speed strategy. Up till now, the city hasn't had or planned to have a low car speed plan; the work being based on a tacit and unwritten low car speed strategy. As an example of local elected officials

supporting the implementation of an issue, Mr Imar Repaalu, Malmö's current mayor, well known in Europe as an architect was a key driver to develop Malmö's switch to sustainable architecture and neighbourhoods.

The following paragraph sums up the findings about each case-study.

- Lille has enforced low car speed limits in many districts thanks to physical and rather expensive measures and state subsidies. A car speed strategy has been voted, as it required by state law, but the implementation is slowly taking place.
- Lund has implemented a clear policy to decreased car speed; the centre was turned to 30 km/h zone in 1998 and residential areas are currently turned into 30 km/h zones step by step. The same year, local elected officials validated a car speed strategy that has led to step by step smooth implementation of lower car speed. The politically daring and successful decision to switch the central area in Lund to a 30 km/h zone enhanced the city's sustainable transportation trend and still facilitates today further sustainable decisions and implementations.
- Malmö was developed with a network of large streets, ideal for cars and high speeds; this city structure explains to a certain extent why Malmö hasn't implemented low car speed limits on a large scale. Moreover, decision-makers have disapproved with a car speed plan proposal designed by civil servants; they currently state that there is no need for such a plan as appropriate car speed limits may vary along time. According to the author, this disagreement between politicians and technicians and the lack of a validated strategy has prevented and prevents the city to lower car speed on large scales. A traffic and a traffic safety plan generally do state, as the only written car speed guideline, that car speed should be appropriate with the urban environment. However, an unwritten car speed strategy exists. Local elected officials in Malmö favour a slight car speed decrease from 50 km/h to 40 km/h, but not to 30 km/h as they believe that it isn't a relevant speed limit in Malmö and that the local drivers wouldn't understand or accept it.

4.6 Personal comments

At last, the author would like to emphasise the main findings. Wrong perceptions of stakeholders' opinion have to be avoided. The system and stakeholders' beliefs have shown that low car speed policy is often considered as a minor issue disregarding its numerous positive effects. Complex or inexistent national regulations have an influence at the local level. Strong support or opposition to low car speed strategy can highly facilitate or prevent its implementation. Even if the city has the will to decrease car speed as well as a well-functioning strategy and city management, the shift to low urban car speed is long.

At last, the following paragraphs will developed some expected results and research “surprises”.

Before starting this study, the author expected France not to rank as well as Sweden concerning implementation of sustainable transportation measures and low car speed limits. Indeed, the well-known Swedish Zero Vision (no death on roads) and the fact that Sweden has the safest roads in the world had misled the author to expect Lille to rank far behind Lund and Malmö. One may assume that the existing gap between France and Sweden is slowly disappearing or doesn't exist concerning the low car speed issue, though further research needs to be carried out.

At the beginning of the research, the author expected theory or subjective visions to be the main driving forces and barriers. It is partly true, though political and organisational driving forces and barriers to low car speed policy seem more relevant during the interviews.

At last, economic development and shop keepers lobby were expected to be the major theoretical and actual barriers to low car speed policy. They effectively are a barrier, though political and organisational barriers also unfolded important.

CONCLUSION

Literature review clearly showed that decreasing car speed leads to more sustainable urban transportation systems and more liveable cities because it has numerous social, environmental and economical positives effects such as improving traffic safety, social equity, air and noise pollution levels, shop keepers turnovers or decreasing public expenses. Civil servants and decision-makers actually implement low car speed policies thanks to good knowledge of the above mentioned theoretical reasons, as well as several “soft” driving forces such as good communication between transport and urban planning city departments, political stability and teamwork between technicians and local elected officials. Institutions’ traditional interests and city structure also strongly influence the city council’s decision to implement, or not, such large scale low car speed policy.

Literature also revealed several motives not to decrease car speed such as disturbed bus travel times or disadvantaging effects on “captives” that can be overcome by “smart” implementation. A few organisational barriers were cited in the academic literature on the grounds that lack of knowledge, lack of know-how and poor city management could hamper the implementation of a low speed car policy. During the interviews many more barriers were developed: perceived and wrong reasons such as high speed leading to higher car flows, actual reasons such as complex or absence of national regulations, political barriers such as fear of retaliation by voters or local elected officials not having interest in low car speed limits in their cities.

Finally, there is no doubt that reducing urban speed limits is a “hot topic”. Many newspaper reports deal with the need to reduce car use in cities as well as “mobility management” experiments trying to change car drivers’ behaviours. If theoretical knowledge on the positive effects of low urban car speed is improved among all stakeholders, more local elected officials would probably act in favour of low car speed policies. One of the following steps of this research will therefore be such information campaigns. They would benefit from the support of the French national transportation research centre (CERTU) or the Swedish Road Administration (Vägverket).

At last, further research is needed on transportation, economic development and car speed and their interrelations as researchers and stakeholders disagree on this issue. For instance, further interviews of car lobby and shop keepers’ actors may clarify their position on low car speed policy. Eventually, the effects of low car speed policy may be compared with other measures aiming at decreasing urban car use as well, such as road pricing or “car-free” or “car-few” cities.

GLOSSARY AND ACRONYMS

Car speed

Car speed limit (the highest speed allowed) differs from average car speed.

CERTU (Centre d'études et de recherche sur les réseaux, les transports, l'urbanisme et les constructions durables) is the French national research centre on networks, transport, urban planning and sustainable building. This state institution publishes many research reports in urban planning and technical guidelines for municipalities.

LMCU = Lille Métropole Communauté Urbaine

The Urban Community of Lille gathers 85 municipalities that have chosen to transfer some of their power and competence to this higher institution in order to manage specific issues.

LMCU is in charge of urban, traffic and housing planning, public services such as public transport, social housing, wastes and water management. It is financed by a business tax (transferred from municipalities to the urban community) as well as state subsidies.

Mobility and accessibility

Mobility in transport domain is usually presented in km/person. It therefore refers to the length of travel in a day or a month for a person.

Accessibility refers to the number of places (jobs, shops or other specific places) accessible within 20 minutes of transportation (or other value).

Policy

The American Heritage dictionary (2004) defines policy as “a plan of action adopted by an individual or social group”.

Traffic calming is a very popular urban planning concept, much used by local elected officials without a common definition.

Pharoah (1993) describes it as the 3 Rs: Reduction of vehicle SPEEDS + Reallocation of carriageway, space for street activities + redesigning the street to encourage new priorities. It focuses more on speed and driver behaviour rather than traffic flows and capacity.

Van Schagen (2003) emphasises its aims: improve traffic safety, increase liveability, protect environment, alleviate the adverse effects of motorized traffic; as well as traffic calming measures: local speed control, traffic restrictions, network planning, parking policies, stimulating use of alternative transportation modes.

The Institute of Transportation Engineers of Washington D.C. defines it as “a combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behaviour, and improve conditions for non motorized street users.” (Knapp, 2000)

Traffic calming should reduce the speed and intrusiveness of traffic, enhance safety, and shift the 'balance of power' in streets used by traffic in favour of pedestrians and where appropriate, cyclists. In principle, pedestrianization which allows some motor-vehicle access merges into the area of traffic calming. (Hass-Klau, 1993)

Urban sprawl

The American Heritage dictionary (2004) defines it as “the unplanned, uncontrolled spreading of urban development into areas adjoining the edge of a city”.

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Appendix 1

The following table lists the interviewees, name and function.

	Interviewee	Group	Function
Lille	Jean-Louis Sehier	Civil servant	Director of living environment department in Lille Metropole Urban Community (LMCU, see glossary)
	Jacques Ramaen	Civil servant	Director of road and public space department in LMCU
	Marc Santré	Decision-maker (green party)	Vice mayor in charge of transportation and roads in city of Lille
	Paul Astier	Decision-maker (UMP, liberal right wing)	Vice president in charge of the Urban Transport Plan in LMCU
	Marc Godefroy	Decision-maker (socialist party)	Mayor of Lezennes municipality (Lezennes is one of the 85 LMCU municipalities)
France	Catia Rennesson	Civil servant	In charge of low car speed projects At CERTU (French national study centre on networks, transport, urban planning and sustainable building)
Lund	Håkan Lockby	Civil servant	Head of road and traffic department in city of Lund
	Anna Karlsson	Civil servant	Traffic and environment engineer in road and traffic department in City of Lund
	Tomas Avenborg	Decision-maker (moderaterna, right wing)	Chairman of the technical committee in City of Lund
	Mikael Thunberg	Decision-maker (social democrat)	Vice-chairman of the technical committee in City of Lund
	Nita Lorimer	Decision-maker (vänsterpartiet, Left party)	Member of the technical committee and City councillor in City of Lund
	Ulf Nyman	Decision-maker (demokratiskvänster partiet, left party)	Substitute for the technical administration in City of Lund
	Solveig Ekström Persson	Former decision-maker (social democrat)	Former chairman of the technical committee in City of Lund
Malmö	Lars Ahlman	Civil servant	Head of the traffic regulation division of the City of Malmö road administration
	Inger Blomqvist	Civil servant	Head of the traffic planning division Of the city of Malmö road administration
	Maria Brodde	Civil servant	In charge of traffic safety Technical Unit in Traffic Division of the city of Malmö
	Hossein Ashouri	Civil servant	In charge of 40 km/h trial at the technical unit in traffic division of the city of Malmö
	Leif Jonsson	Civil servant	Traffic engineer at the technical unit in traffic division of the city of Malmö
	Anders Rubin	Decision-maker (social democrat)	City vice-councillor of the city of Malmö
	Anders Söderberg	Decision-maker Miljöpartiet, Environmental party)	Vice-chairman of environment committee of the city of Malmö
	Emmanuel Morfiadakis	Decision-maker (social democrat)	Chairman of the technical committee of the city of Malmö
	Leif Linderholm	Private company	In charge of 40 km/h trial evaluation in Malmö for Trivector (main transport consulting company)