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Beyond the private car
Managing sustainable mobility in everyday life

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UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW

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Ellen Lagrell

Göteborg 2024

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ABSTRACT

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It is increasingly recognized that private car use needs to be reduced, alongside spatial planning solutions and vehicle development, to realize a sustainable mobility transition. But the fact that the organisation of everyday life is profoundly shaped by car use remains a persistent challenge. By studying how carless individuals manage mobility to organise their everyday lives, this thesis investigates how mobility can be remade to reduce private car use.

The thesis draws on a dual theoretical perspective to analyze the role of mobility in everyday life. Time-geography is used to understand the situated conditions of carless individuals to manage constraints and partake in everyday activities, whilst social practice theory enables an understanding of the social practices that activities are part of, and how they bundle with mobility and car use. The aim of the thesis is to identify conditions, challenges, and opportunities for a sustainable mobility transition. This is pursued through three consecutive studies, applying qualitative and quantitative methods to investigate different aspects of carless everyday mobility: the situated organisation of relatively well-functioning carless lives; extensive patterns of mobility and car use among the carless in Sweden; and the prospects of ridesharing to reduce car use in organised leisure practices.

The findings demonstrate that carlessness is not a binary state, but a matter of degrees of access and degrees of need, shifting with time and context. Accessibility strategies based on proximity and coordination are central and work particularly well for routinized activities and with support from the social network. However, challenges arise in the face of social norms and mobility expectations, particularly in relation to non-routinized leisure activities requiring the coordination of people and things. The thesis identifies potential in recrafting the social practices of leisure to reduce car dependence, and to promote ridesharing when car use remains necessary. While specific accessibility strategies are highly contextual, other findings may be more directly transferrable to societies and geographies with similar patterns of car dependence as those prevailing in Sweden.

This thesis contributes to ongoing debates in policy and academia about how to realise a transition toward a low-carbon future, and is also a scholarly contribution on how to theorise and investigate the role of mobility in everyday life.

Keywords: sustainable mobility, carlessness, car dependence, Sweden, leisure, everyday life, social practices, time geography

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Göteborg 29 March 2024

Contents

Chapter 1. Introduction ... 1
1.1Framing the problem ... 1
1.2 Aim and research questions ... 4
1.3 Sweden and the car ... 6
1.4 Delimitations ... 7
1.5 Outline of the thesis ... 8

Chapter 2. Previous research on carlessness and everyday mobility ... 11
2.1 Car dependence in everyday life ... 11
2.1.1 People and life phases ... 11
2.1.2 Activities and the elusive sphere of leisure ... 13
2.2 Patterns of carlessness ... 15
2.2.1 Socio-demography and the matter of choice and constraint ... 15
2.2.2 Carlessness as a temporary condition ... 17
2.2.3 Comparing mobility and activity participation of the carless and car-owners ... 19
2.3 Everyday life without a private car ... 21
2.3.1 In-depth approaches ... 21
2.3.2 The roles and functions of transport modes ... 21
2.3.3 Shared car use and the asset of social networks ... 23
2.3.4 Aspects of time and flexibility ... 25
2.3.5 Norms and social tensions ... 27
2.4 Situating the thesis ... 28

Chapter 3. Theoretical perspective ... 30
3.1 Time geography and the activity-based approach ... 31
3.1.1 Introduction ... 31
3.1.2 Opportunity space and the potential constraints of carlessness ... 32
3.1.3 Activities and the projects they pertain to ... 35
3.1.4 Accessibility strategies beyond the private car ... 37
3.2 Theories of social practice ... 38
3.2.1 Introduction ... 38
3.2.2 Entities, elements and the reproduction of practices ... 40
3.2.3 Materiality and the bundling of car use with other social practices ... 42
3.2.4 Car-dependent practices and leeway for change ... 44
3.3 Concluding remarks ... 47

Chapter 4. Research design and methods 48
4.1 Research design 48
4.2 Study 1: Interviews with voluntarily carless parents 50
4.2.1 Sampling 50
4.2.2 Interviewing, analysing and writing up 51
4.3 Study 2: Analysis of the Swedish National Travel Survey 53
4.3.1 Data and unit of study 53
4.3.2 Limitations 55
4.4 Study 3: Interviews with carless practitioners of organised leisure 55
4.4.1 The Covid-19 pandemic 55
4.4.2 Sampling 56
4.4.3 Interviewing, analysing and writing up 58
4.5 Realist perspective and researcher situatedness 59

Chapter 5. Paper summaries 62
Paper 1 62
Paper 2 63
Paper 3 66

Chapter 6. Findings and concluding discussion 69
6.1 Main findings 69
6.1.1 Conditions that make carless life work 69
6.1.2 Challenges in carless lives: mobility norms and 'escaping the cage of routines' 72
6.1.3 The opportunity of (re)bundling ridesharing with organised leisure practices 74
6.2 Contributions and transferability 76
6.3 Ways forward 78
6.3.1 New opportunities for sustainable mobility – approaching leisure travel 78
6.3.2 Suggestions for further research 79

Sammanfattning (summary in Swedish) 81

References 85

Appendices

Appendix A

Paper 1: Lagrell, E., Thulin, E., & Vilhelmson, B. (2018). Accessibility strategies beyond the private car: A study on voluntarily carless families with young children in Gothenburg. *Journal of Transport Geography 72*, 218-227.

Paper 2: Lagrell, E., & Gil Solá, A. (2021). Car use of the carless: Everyday conditions for reducing car dependence. *Sustainability, 13*(18).

Paper 3: Lagrell, E. (2024). How can ridesharing be facilitated in car-dependent practices? Insights from carless participants in organized leisure. *Travel Behaviour and Society, 35*.

Appendix B

Study 1 interview guide

Appendix C

Study 3 interview guide

Chapter 1. Introduction

1.1 Framing the problem

This thesis is about the role of mobility and car use in everyday life, and how this role plays out in the absence of private car ownership. My interest in the topic stems from a long-lasting fascination in how people move about to organise the ordinary activities of everyday life, paired with an increasing sense of urgency regarding the need for a sustainable transition of the mobility system. By studying how the carless – defined here as individuals living in households without car ownership – organise their everyday lives amid a car-based society, I seek to understand the preconditions for a mobility transition that would entail less car use. This thesis contributes to ongoing debates in policy and academia about how to realise a transition toward a low-carbon future, in which the mobility system dominated by private cars presents one of the most intricate and challenging problems. This research is also a scholarly contribution on how to theorise and investigate the role of mobility in everyday life – as situated not only with the individual but also in relation to wider social practices.

The car is a very convenient mode of transportation because it enables fast, flexible and individualised on-demand mobility. Unfortunately, the negative externalities of car use are becoming hard to ignore. In addition to local problems related to the environment and health, car use is a major contributor to global climate change. In Sweden, a third of greenhouse gas emissions come from transportation, of which about 60% is emitted from personal cars (Naturvårdsverket, 2023). National climate targets set for 2030 aim for reductions in emissions from domestic transportation (excluding air transportation) by at least 70% between 2010 and 2030. In Sweden, policy assessment has concluded that, while better energy efficiency and electrification of vehicles are important parts of the

solution, car use reduction through a 'transport efficient society' (Naturvårdsverket, 2022) is necessary to reach national climate targets.

Existing visions and plans for transitioning mobility toward less car use often involve necessary changes in the built environment, infrastructures and their integrated technologies. Popular concepts such as the 15-minute city (Moreno, Allam, Chabaud, Gall, & Pratlong, 2021), in which inhabitants have their daily needs located within 15 minutes walking or cycling, envision forms of urban planning that would reduce the need to travel by car. Measures to affect travel behaviour are also discussed, such as congestion taxes and reducing standards for parking provision (Pädam, et al., 2022). These have been applied in parts of Sweden, with some success. However, a challenge persists in that the organisation of everyday life is profoundly shaped by the availability of the car, and some parts of this organisation may be difficult to change through interventions in the physical urban fabric. Reducing and changing car use as consistently as is needed would require extensive changes in how people carry out and organise their everyday activities. Both individual routines and widely established ideas of how things are normally done – such as car commuting, wholesale shopping, outdoor recreation or taking children to leisure activities – are shaped by the fast, flexible and individualised mobility provided by the private car. The car has enabled urban sprawl and the spatial extension of seemingly unrelated societal spheres, such as labour markets, residential patterns, social networks and consumption and leisure practices. These tendencies resulting from car use reinforce societal and individual car dependence and entail great challenges for those choosing or being forced into carlessness.

At the core of this thesis is the position that, in order for a transition towards low-carbon mobility to be feasible, the organisation of everyday life needs to be remade *in parallel* with physical planning and the adoption of technological innovations. This means finding and promoting available solutions *within presently existing spatial and technological conditions*. Responses to major crises, such as the global Covid-19 pandemic, have shown that there is potential for fast and radical changes within given societal frames.

However, to intentionally bring about change, there is a need to explore all possible solutions, large and small. From the perspective of the individual, such solutions may involve increased use of nearby amenities (if they exist), walking and cycling more (if able to), using public transportation (if accessible and affordable) or using digital technology to reduce the need to be mobile. Solutions may also include changing car-dependent activities to support mobility solutions other than the private car. The existing structures entail that, in addition to non-car modes of travel, more efficient forms of car use will be necessary, which can be accomplished by the sharing of car trips (Shaheen, 2018).

Following this position, I argue that the mobility transition is about different ways of moving away from *private* car use – that is, car use based on private car ownership. This argument also motivates the empirical focus of this thesis, which is on those who currently navigate everyday life without their own car: the carless. Although the carless are a very heterogeneous group with differing life situations, their experiences are a model of sorts regarding the possible meanings of *de facto* reducing car use and the barriers against and potential solutions towards such change. Situations entailing strain and hardship for the carless, as well as the occurrence of car use, reflect car dependence and potential barriers to change. Such barriers may be overcome either by changing practices that are car dependent in order to reduce the need for a car, or by enabling shared car use that is not based on private ownership.

Previous research on socio-demographic patterns of carlessness (Brown, 2017; Van Eenoo, 2023) and gaps in mobility between the carless and car owners (Lovejoy, 2012; Mattioli, 2014) illustrate that carlessness can be very constraining. Being carless in spatial and social contexts where a car is necessary can often entail difficulties in reaching necessary amenities and welfare services, as well as reduced opportunities for employment, education and leisure (Mattioli & Colleoni, 2015.). Given the pressing need for a mobility transition with reduced car use, as outlined above, I argue that a crucial response to the excluding effects in the mobility system should be to make car *independence* available as widely as possible. In line

with this position, I seek to identify the enablers of and barriers to making everyday life work without a private car. Thus, although the socially excluding effects of car dependence is not at the centre of focus, this thesis is concerned with the various forms of resources that are required in order for carlessness to be less of a constraint in the present transport system.

I draw on time geography and social practice theory to analyse mobility as part of the organisation of everyday life. Time geography and the related activity-based approach to mobility (e.g. Fox, 1995) consider mobility as a means of accessing various activities. An underlying principle is that people's lives – and the activities we engage in – are geographically spread out (Frändberg, Thulin, & Vilhelmson, 2005) and that the need for mobility can be derived from the temporal and spatial organisation of these activities. In addition to mobility, I consider other ways of gaining access to opportunities, such as activity coordination, prioritising nearby alternatives or gaining access to opportunities virtually.

With social practice theory, I view activities as part of established practices in society – practices that are more or less car dependent (Mattioli, Anable, & Vrostou, 2016) and that may be susceptible to change. I specifically study leisure practices as performed by the carless, as such practices represent a sphere of everyday life that is generally car dependent and difficult to target through sustainability policy because it is desired and optional (Aall, Grimstad Klepp, Brudvik Engeset, Skuland, & Stöa, 2011; Holden & Linnerud, 2011; Trafikanalys, 2022; Strömblad, Winslott Hiselius, Smidfelt Rosqvist, & Svensson, 2022).

1.2 Aim and research questions

The aim of this thesis is to identify conditions, challenges and opportunities for a sustainable mobility transition by studying everyday mobility from the perspective of the carless in Sweden. Careful attention is paid to how carless individuals and families manage personal mobility in relation to their everyday need and desire to carry out activities in different locations. I pursue this aim in three consecutive studies,

approaching different aspects of carless everyday mobility: the situated organisation of relatively well-functioning carless lives; patterns of mobility and the role of the car among the carless in Sweden; and the prospects of ridesharing as a means of reducing car use in organised leisure practices.

The empirical work of this thesis is designed with an exploratory sequential, mixed-methods approach (Elwood, 2010; Creswell, 2014). The exploratory approach entails a continuous formulation of research questions and methods; in this thesis, it also involves a shift in the empirical and theoretical focus from mobility and other accessibility strategies of carless individuals in the first and second study to the carless performance of car-dependent practices in the third study. In the first study, I focus specifically on parents that have voluntarily decided to forgo car ownership, even though they could afford one and are in life situations in which car use is normally expected. Through their voluntary carlessness, these parents exemplify how car use reductions can be achieved by highly motivated individuals, within what spheres of everyday life this can be done, and with what benefits, efforts and tensions. This first study draws on eight in-depth interviews with parents and is guided by the following research question:

RQ 1: How is everyday life managed and what accessibility strategies are applied by voluntarily carless families?

The findings from the first study pose further questions about carless mobility in the wider population, including the role of the car, and in relation to the everyday context of activities and life situations. Thus, the second study seeks to understand the broader patterns of carless mobility in Sweden through a statistical analysis of the Swedish National Travel Survey 2011–2016. While the results suggest that there is potential for reducing car use, they also point to car-dependent situations in which shared car use can play an important role in a mobility transition. The following research question guides the second study:

RQ 2: What are the general mobility patterns of carless Swedes in relation to specific everyday life contexts, and what is the role of the car in their lives?

Thus far, carless individuals are at the centre of investigation. The findings continuously indicate that, while individual circumstances greatly influence the feasibility of carless life, the feasibility also varies significantly across activity types. To grasp the mechanisms behind activity related car dependence, the empirical focus of the third study shifts towards practices, and specifically towards leisure practices considered to be car dependent. The voluntarily carless parents in the first study emphasize that leisure activities are sometimes difficult to manage without a car, while the findings of the second study indicate that successful strategies do exist among the carless to manage leisure activity participation. The third study focuses on ridesharing as one such strategy – and as one that could contribute to reducing private car use in car-dependent practices. Thus, the carless performances of these practices are thought here to illustrate potential 'proto-practices' (Shove, Pantzar, & Watson, 2012) beyond the private car; that is, they can be viewed as seeds for how practices could change. Drawing on in-depth interviews with 25 carless practitioners of scouting, orienteering and children's soccer, the third study is guided by the following research question:

RQ 3: How can ridesharing be facilitated in organised leisure practices in order to reduce reliance on private car use?

1.3 Sweden and the car

This thesis draws on empirical data collected in Sweden through qualitative interviews and data from the National Travel Survey. Sweden has about 10.5 million inhabitants (SCB, 2024). Its land area is relatively large, so the population density is low, at 25.9 inhabitants per km^2 for the whole country. This makes Sweden one of the most sparsely populated countries in Europe, on par with Finland, Norway and the Baltic countries (Eurostat, 2023). However, Sweden's population distribution is uneven, with significantly more densely populated areas along the coast and in the

southern parts of the country (Figure 1, p. 10). Unsurprisingly, Sweden's car density is a reversed reflection of its population density, with more car ownership in sparsely populated areas (Trafikanalys, 2023a).

As in many other European countries, the personal car was popularized in Sweden during the decades following the Second World War, and the rapid increase in traffic gave rise to problems of congestion and accidents. To address these problems, planning visions strongly influenced by American ideals were realised in the 1950s, 60s and 70s in the form of shopping malls, city centres, suburban centres and residential areas linked by infrastructures for motor traffic (Lundin, 2008). These dramatic societal changes – which were in no way unique to Sweden – firmly grounded the private car and its associated ideals at the centre of society and everyday life. The increasing motorisation and individualisation of daily travel greatly increased the daily distance individuals travelled, continuously stretching the spaces of everyday life (Frändberg & Vilhelmson, 2011). Car ownership per capita has been increasing in Sweden since the 1950s, with trend breaks in years of financial crisis or high fuel prices. In 2022 and 2023, mainly due to high inflation and rising interest rates, the number of cars on the road decreased for the first time since the financial crisis in the 1990s (Trafikanalys, 2023b).

1.4 Delimitations

Firstly, because this thesis focuses on how carless life can be made to work, rather than on situations in which carlessness is obviously associated with isolation, geographical delimitations have been made. Being a sparsely populated country, the potential for car use reductions in Sweden is primarily thought to exist in urban and semi-urban areas where the supply of public transportation and other amenities is sufficient. Therefore, the empirical work in the three studies of this thesis is delimited to such areas. RQ1 covers voluntarily carless parents residing in central and semi-central parts of the city of Gothenburg. Although a national dataset is used for RQ2, carless residents of rural municipalities are

excluded from the analysis. The interviewees for RQ3 live in the larger cities of Southern Sweden, with exceptions from smaller towns.

Secondly, this thesis studies the *everyday* mobility of the carless. This calls for a delimitation regarding the types of trips under consideration. In the qualitative material, reflections about longer trips, such as vacations, are present and considered but are not the centre of attention. In the extensive analysis of RQ2, however, trips for the purpose of vacation are excluded, along with international trips. Also, for the variable of trip distance, the median is used rather than the mean to avoid the extreme values of long trips.

Thirdly, the concept of transition, while central in the framing of the underlying problem, is not theorised in this thesis. Transition is used to refer to a process of change, from one state or condition to another (Oxford English Dictionary, 2024), as the thesis investigates activities and practices that could exemplify potential for such a change in Sweden's mobility system. While theories of socio-technical transition (e.g. the multi-level perspective proposed by Geels, 2012) could be used to analyse how change at the micro-level – such as changing mobility practices – breaks through on a systemic level, such analysis is beyond the scope of this thesis.

1.5 Outline of the thesis

This is a compilation thesis; thus, it consists of two complimentary parts: a collection of three papers and a framework (what is known in Sweden as the 'kappa'). The framework serves to situate the papers in a broader academic and societal context. It includes a theoretical approach presented with a twofold purpose: to guide the design and analysis of the empirical work in the three separate studies reported in the papers; and to enable an overarching concluding discussion in the thesis. In Chapter 2, I situate the thesis in relation to previous research on carlessness and everyday mobility, beginning with an overview of activity-related car dependence. In Chapter 3, I introduce the theoretical approach, drawing on time

geography and social practice theory. Chapter 4 is an overview of the research design of the thesis and the methods used for data collection and management, including reflections on methodology and researcher situatedness. Chapter 5 presents summaries of Papers 1–3, and Chapter 6 discusses the main findings and contributions of the thesis in relation to the aim set out in the introduction.

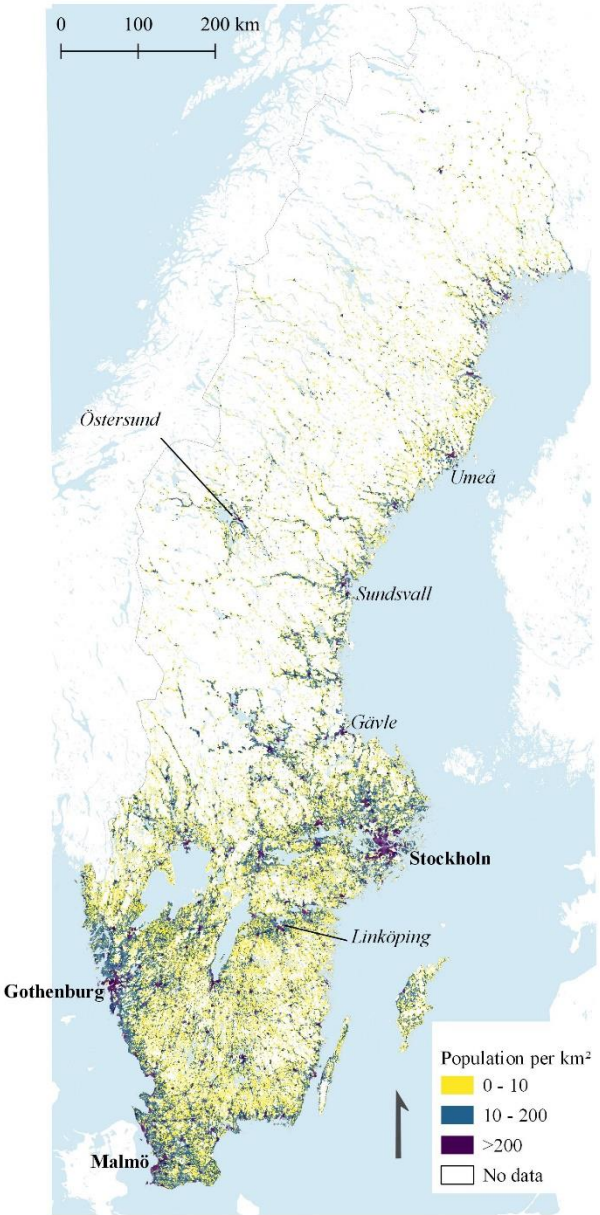


Figure 1: Distribution of population in Sweden, 2023 (data source: Statistics Sweden, SCB).

Chapter 2. Previous research on carlessness and everyday mobility

The purpose of this chapter is to give an overview of existing research on carlessness and the related conditions for everyday mobility, and thus to position the thesis within a relevant academic field. Car dependence is taken as a point of departure because, in many ways, car dependence sets the terms for managing everyday life *without* the private car. Car dependence can be regarded in relation to built environments and infrastructures, to activities and practices, and to individual lives (Mattioli, Anable, & Vrostou, 2016). These aspects of car dependence are echoed in the results from extensive research on carlessness covered in this overview. The literature deals with questions such as who the carless are in terms of demographic and socio-economic patterns, how carlessness changes or remains stable over an individual's life course and how mobility plays out in the absence of a private car. Intensive studies of everyday life without a private car, however scant, offer valuable insights into how carlessness is experienced and managed.

2.1 Car dependence in everyday life

2.1.1 People and life phases

Dependence on car-based mobility varies according to people's phases of life, implying that it may be easier for some groups of people, due to the circumstances of their life situations, to be carless than for others. Young adults who are not yet established on the labour market, have not started a family and perhaps have not moved to detached housing tend to own and use cars to a lesser extent. Longitudinal studies show that this group tends to drive even less than earlier generations of young adults (Frändberg & Vilhelmson, 2014). This tendency can be explained by a

weaker economy and increased urbanisation among the young, as well as young adults spending more time on education and postponing settling into adulthood with work and family (Frändberg & Vilhelmson, 2014).

Becoming a parent is often associated with increased car ownership and use. Early parenthood is a period in life when a car is often procured to facilitate the mobility needs of the family (Prillwitz, Harms, & Lanzendorf, 2006; Clark, Lyons, & Chatterjee, 2016; Oakil, 2016). The responsibilities of parenthood and the need to coordinate (McLaren, 2016), perceptions of risk (Freudendal-Pedersen, 2009), time pressure and convenience add up to a 'structural story' that 'When you have children, you need a car' (Freudendal-Pedersen, 2009, p. 43). The relationality of mobility is also highly present in family life, as family members need to adjust to one another both temporally and spatially and to negotiate about common mobility (Jensen, Sheller, & Wind, 2015). However, given the large variability in modal practices among parents, it has been suggested that 'parents and cars can be delinked' (Mclaren, 2016, p. 223), particularly for families living in dense urban areas.

The needs and conditions for mobility change with age, due to financial resources, time and physical abilities. In particular, the transition to retirement is associated with changed mobility patterns (Berg, Levin, Abramsson, & Hagberg, 2014), as many people become less mobile. In Sweden, older people generally travel less, both on a daily basis and when it comes to longer trips; they also make fewer trips by bicycle and public transport compared with the population in general (Trafikanalys, 2018). However, as Hjorthol, Levin and Sirén (2010) have reported, older Scandinavian people live more active lives today than in previous generations, and retirees in Sweden travel more today than they did a few decades ago. They also own and use cars to a greater extent than previous generations (Hjorthol et al., 2010; Elldér, Vilhelmson, & Thulin, 2023). Interestingly, Elldér et al. (2023) found that – excluding travel time – older people not using cars spend as much *time* on active leisure, social engagement and productive work as do car users.

Regardless of life phase, car use also varies with socio-economic factors. Turning to Sweden again, the half of the population with the highest income makes the most trips – in total and by car, by public transport and by bicycle – while the people in the lowest income quartile make the most trips on foot (Trafikanalys, 2018). Gender has also been shown to be central in car use, with a gap between women and men in terms of mobility in general and car use in particular. Even though there are indications that the gender gap is decreasing, as women are using cars somewhat more (Frändberg & Vilhelmson, 2014), women still make shorter trips than men and fewer by car (Trafikanalys, 2018). Gil Solá (2013, 2016) showed that, in car-owning households with fewer cars than drivers, mobility can have a gendered outcome regarding who gets access to the car. Among cohabiting women and men with children, negotiations may be regulated by implied gender contracts, steering the allocation of parental responsibilities, household tasks and work life priorities. By extension, unequal gender contracts result in unequal access to mobility resources such as the family car, with consequences regarding the gendering of opportunities on the labour market (Gil Solá, 2016).

2.1.2 Activities and the elusive sphere of everyday leisure

When the trip purpose is included as a variable in extensive travel research, the share of car use is found to vary in relation to different activities. In particular, many everyday leisure activities have been demonstrated to be car dependent. In Sweden, leisure activities are associated with the highest car use mileage (as compared with work, school, business and shopping/services) in both cities and rural areas (Winslott Hiselius & Smidfelt Rosqvist, 2018). As described in the introduction of this thesis, the Swedish authority Transport Analysis has established that leisure travel is the only category in which car use is increasing (Trafikanalys, 2022). Why is this the case? One key dimension may be the potentially high degree of freedom of choice regarding the time and place for leisure activities – an attribute that has been associated with a higher occurrence of car use (Vilhelmson, 2007). Another characteristic of activities that is associated with frequent car use is if the activities involve travelling with

dependents such as children or pets, or the need to carry bulky objects (Mattioli, Anable, & Vrostou, 2016). This is likely to be the case with many leisure activities, such as children's organised leisure activities or activities requiring specific and personal equipment. In Norway, Aall et al. (2011) found that the increase in car use for outdoor leisure is related to increased diversity and availability of outdoor recreation activities in remote places, as well as an increase of the equipment that people own and use for these activities.

Given the large share of car use in relation to leisure activities, it is of particular interest to identify opportunities for change in this sphere of everyday life. In studies of mobility and disruptive events (Marsden, et al., 2020; Strömblad, Winslott Hiselius, Smidfelt Rosqvist, & Svensson, 2021), notable adaptive capacity has been observed in relation to leisure activities. Beyond the mere cancelation of trips during pandemic restrictions, Strömblad et al. (2021) found that people adapted to the restrictions by doing similar leisure activities in different ways – through 're-moding' (i.e. using a different mode of transportation), retiming, rescheduling and relocation. Moreover, 35% of trips made by car for exercise and outdoor life in Sweden are shorter than 5 km (Strömblad et al., 2022), which suggests that many trips may be eligible for change. While these short trips do not take up the lion's share of mileage by car, they may be a low-hanging fruit for behavioural change. The temporal and spatial flexibility of leisure activities may be a driver of general car dependence; however, this flexibility can also hold potential for adaptation. Baumgartner et al. (2022) showed that the mere availability of a car is a strong predictor of car use in leisure activities. Taking interest in the carless, who lack the instant car availability enabled by ownership, is a way of identifying the feasibility and possible solutions for adapting leisure activities to less car use.

Up-to-date research on carless mobility in relation to activities and practices is rather scant but suggests the use of specific strategies to access leisure activities. In the United States, Lovejoy (2012) found physical exercise and sports to be the activities that entailed the least car use and

the most walking and cycling among the carless, indicating that the carless adjusted their leisure activities to align with their mobility resources by choosing what was within reach. In an intensive Swedish study, Tillberg (2001) also found that families adjusted their leisure activity patterns to the spatial reach permitted by their degree of car access. Moreover, in both Norway and Sweden, household structure rather than car ownership was found to correlate with adolescents' participation in leisure activities (Sandqvist, 2009; Ystmark Bjerkan & Elvsaas Nordtömme, 2014). While carlessness may undoubtedly lead to an opting-out of desirable activities that are inaccessible without a car, research indicates that leisure activities can be adjusted to the level of mobility available for the carless.

The discretionary character of leisure activities is a challenge from a transport policy point of view. These trips are intrinsically valued and can therefore be difficult to target with policy measures in the same way as necessary trips are usually targeted, by reducing length or promoting other modes (Holden & Linnerud, 2011). Hence, it may well prove necessary to investigate how leisure activities themselves can be adjusted to enable participation without reliance on the private car.

2.2 Patterns of carlessness

2.2.1 Socio-demography and the matter of choice and constraint

Several studies have been published on the composition of the carless population group – predominantly carried out in the US, with some in Europe as well – and have established some general patterns. In the US, carless households have lower income, educational attainment and employment rates on average compared with car owners (Lovejoy, 2012; Brown, 2017; Mitra & Saphores, 2017). As for residential environment, carless households are more likely to live in denser environments than car-owning groups (Lovejoy, 2012). This tendency is similar in Europe, where carless households have previously been found to more often be single,

older, without children, managed by a woman, and/or unemployed in comparison with the European average (Dargay, Gately, & Sommer, 2007). In the UK, the socio-economic composition of carless households has also been found to vary depending on the residential environment, with non-car owners being more socially marginalised in more sparsely populated areas and more diverse in denser environments (Mattioli, 2014). Thus, the carless group is itself socioeconomically heterogeneous, pointing to an important distinction made in previous research (Brown, 2017; Mitra & Saphores, 2017; Van Eenoo, 2023) of voluntary and involuntary carlessness.

In actuality, the only way of knowing whether carlessness is an active choice is by asking the question. Mitra and Saphores (2017) differentiated between voluntarily and involuntarily carless households based on a multiple-choice question in the California Household Travel Survey (CHTS) about the reason for not owning a car. Households that responded that they were carless because they did not need a car or because they were concerned about the environment were defined as 'voluntarily carless'. Households giving reasons related to health, economy or driving capacity were defined as 'involuntarily carless'. Mitra and Saphores (2017) found voluntarily carless households to be more affluent and to more often live in areas that are more diverse in land use, more walkable, and with better access to public transit than the involuntarily carless households. Brown (2017), who also analysed the CHTS, emphasised the connection with income: 'as income goes up, not having a car appears to shift from being motivated by constraint to being motivated by choice' (Brown, 2017, p. 155). Upon comparing CHTS data with the survey Mobility in Germany, which also asks respondents for the reason why they do not own a car, Kühne et al. (2018) found some interesting differences. In Germany, higher education was associated with voluntary carlessness; moreover, higher population density and public transport access were more strongly associated with voluntary carlessness in Germany than in California (Kühne, Mitra, & Saphores, 2018). Analyzing self-selection, the researchers found urban environments to be more attractive for well-off households in Germany, while in California,

households with high incomes and high education levels were more concentrated in sparser and more car-dependent suburban areas (Kühne, Mitra, & Saphores, 2018). These findings indicate possible differences in the conditions for carlessness, depending on spatial context.

Although income levels are strongly associated with the level of car ownership, there is an important interplay between population density and the degree of urbanisation that results in differences between countries (Dargay et al., 2007). If residential patterns are sparse and the conditions are insufficient to allow people to manage without a car (e.g. poor accessibility to services and public transport), then people will acquire cars at lower income levels because they must. This is a form of social disadvantage arising from car dependence that can be called 'enforced car ownership'; it leads to economic stress, as a relatively large proportion of the household's income is invested in the car (Mattioli, 2014).

The other side of disadvantage related to carlessness relates to consequences for mobility and, by extension, access to opportunities. In California, involuntarily carless households have been found to make fewer but longer trips than voluntarily carless ones and to have longer travel times (Mitra & Saphores, 2019). Interestingly, Mitra and Saphores (2019) found that, while the median trip time for the involuntarily carless was longer than that of car owners, the voluntarily carless' median trip time was about the same as that of car owners. The voluntarily carless in California also walked and biked more and used cars and public transport less than the involuntarily carless, which is in itself an expression of their more walkable residential environment (Mitra & Saphores, 2019)

2.2.2 Carlessness as a temporary condition

The abovementioned studies on carlessness are cross-sectional and provide a snapshot of demographic patterns. However, the carless group is not stable; there are important dynamics in how it varies over time. Thus, on the individual level, being carless or owning a car may well be a temporary condition that shifts periodically when circumstances change.

Understanding these dynamics is valuable when envisioning a shift away from the assumption of private car ownership.

Dargay, Hivert and Legros (2008) analysed the European Community Household Survey, which was performed in several waves during 1994–2001. They found that, while car availability at the aggregate level was slowly increasing over the years, there was volatility among individual households: some households gained and lost access to a car several times during the period of the study. This volatility in car ownership was most common in European countries whose population in general had the lowest car availability (Dargay et al., 2008). In the United States as well, carlessness has been found to be temporary for many. Analysing data from the Panel Study of Income Dynamics for 1999–2011, Klein and Smart (2017) found that carlessness was rarely permanent, and that socioeconomically disadvantaged groups were more likely to switch in and out of car ownership during the studied period. A later study showed that, for low-income households in the United States, the reasons for both acquiring and shedding a car were mainly financial (Klein, Basu, & Smart, 2023). The volatility of car ownership among disadvantaged groups (Klein & Smart, 2017) or in countries where car ownership is expensive (Dargay et al., 2008) indicates a high presence of involuntary carlessness and enforced car ownership (Mattioli, 2014).

Changes in car ownership have been associated with key life events that change the need for mobility, such as changes in the composition of the household, moving house, changes in employment or education, or policy changes (Müggenberg, Busch-Geertsema, & Lanzendorf, 2015). Some events, such as the birth of a child, moving house or moving in with a partner, are associated with increased car ownership (Oakil, Ettema, Arentze, & Timmermans, 2014). Other events are associated with household demotorisation (i.e. reduced car ownership), such as separation, unemployment and retirement (Dargay, Hanly, Madre, Hivert, & Chlond, 2003; Oakil, Ettema, Arentze, & Timmermans, 2014). In essence, these associations have to do with changes in the households' need for a car and/or in their financial ability to own one. Furthermore, the effects of

life events on car ownership changes appear to be gendered, as women are somewhat more prone to change car ownership level in response to life events (Oakil, 2016).

Oakil et al. (2014) emphasise that changes in car ownership in relation to key events may take place in anticipation of an event as well as when the event occurs. A further contextual view nuances this temporal offset even more: based on a qualitative mobility biographies study on members of carless households in the Vienna region, Sattlegger and Rau (2016) noted that there might be substantial time lags between processes in individuals' mobility biographies and the actual establishment of practices. Experiences from growing up, for instance, may impact how a person reacts to life events later in life. However, the way that life histories influence mobility choices later in life is individual: in an interview study of car-free parents in Sydney, Kent (2024) found this influence to be diverse and sometimes contradictory to experiences early in life. Thus, assuming that mobility changes directly follow specific events can be seen as an oversimplification. Moreover, Sattlegger and Rau (2016) have pointed out that mobility is relational, as biographies are intertwined and individual experiences interact with broader societal change.

2.2.3 Comparing mobility and activity participation of the carless and car owners

As the car is an efficient tool for fast and flexible mobility, it is expected that a household without car ownership will have a different kind of daily mobility (and thus, a different activity pattern) than a car-owning household, regardless of the direction of causation. A number of extensive studies have compared the mobility of the carless and car owners and as expected, a common observation is that the carless are generally less mobile than car owners. In the US and the UK, the carless were found to make about 70% as many trips as car owners and with 70% of the trip length (Lovejoy, 2012; Mattioli, 2014). Looking at household trips instead of trips per individual, Mitra and Saphores (2019) found that carless households in California, USA, made less than half as many trips as car

owners. This lower level of mobility has consequences for the frequency of activity participation, as – geography and life situation aside – people without car access participate in fewer out-of-home activities than those with car access (Morris, Blumenberg, & Guerra, 2020).

A closer look reveals that the mobility differences between car owners and the carless vary depending on the spatial context. Based on a spatial typology of residential areas ranging from inner city to rural, Mattioli (2014) measured the mobility gap between car owners and the carless in terms of trip rates, travel distance and journey time. Mattioli found support for the hypothesis that the mobility gap between car owners and non-car owners increases as urbanity, or density, decreases (2014). Lovejoy (2012) found similar tendencies in the US in regard to the residential environment; however, she also found the mobility gap to differ between groups of people. When looking at age, the mobility gap was found to be the largest between car owners and the carless in their 70s and 80s, while there was no gap for 18- to 24-year-olds (Lovejoy, 2012). Moreover, the gap was larger with carless men than for carless women, as the latter made more total trips and used cars more often (Lovejoy, 2012).

Overall, it is notable that car use is prevalent among the carless. In the US, 29% of the trips made by carless individuals were found to be made by car (Lovejoy, 2012). Analysing trip distances for carless individuals in the UK, Mattioli (2014) found 36% of the distance to be travelled by car. When analysing the modal split (also based on distance) of non-car owners, Mattioli (2014) found that the carless living in sparser environments relied more on cars for their mobility, while urban dwellers largely got by with public transport. It is important to note here, however, that analysing trip frequency gives very different results from analysing the distance travelled.

2.3 Everyday life without a private car

2.3.1 In-depth approaches

Thus far, the overview has focused on extensive knowledge about the aggregate patterns of carlessness and mobility. Understanding how carlessness is managed and experienced *in situ* in a car-dependent society, however, calls for more intensive research. This section provides an overview of a small yet growing field of in-depth research on daily life without a private car. Some of the research included here is based on intervention studies in which motivated, car-owning families have the opportunity to try out carless life for a limited period of time. Such families are commonly provided with specific mobility resources to replace the car, such as light electric vehicles (Hasselqvist, Hesselgren, & Bogdan, 2016), cargo bikes, public transport passes and sometimes access to a car-sharing system (Isberg, Bengtsson, & Ståhl, 2020). Car-free housing developments, with the specific conditions that they provide for those who live there, are another type of empirical context (Baehler & Rérat, 2020a; 2020b; Selzer & Lanzendorf, 2022). Furthermore, a small number of studies have intensively investigated practices and strategies (Grahn, 1997; Lovejoy & Handy, 2011; Paijmans & Pojani, 2021; Sandqvist, 2009) or mobility biographies (Sattlegger & Rau, 2016; Kent, 2024) of people who are carless outside of the context of an intervention study or a car-free housing development. Taken together, these studies represent contexts with varying conditions for mobility and varying degrees of car dependence – thus, with varying conditions for managing everyday life *without* a private car.

2.3.2 The roles and functions of transport modes

Different transport modes play different roles in the daily life of a carless individual or household. When a private car is not available as a standard option, the daily mobility pattern is composed of other modes, including shared car use, and is adapted to activity-related needs. For many families,

public transport is important for commuting and taking children to school. Some families in the intervention studies reported that their older children showed increased independence from using public transportation on their own more than usual (Hasselqvist et al., 2016). Bicycles and light electric vehicles were important for many of the carless families, particularly in the intervention studies (Hasselqvist et al., 2016; Isberg et al., 2020) and in the car-free housing developments (Baehler & Rérat, 2020b). Combined with public transport, these were often perceived to be sufficient for daily trips. The flexibility of the bike was emphasised as an advantage, making the bike the foremost replacement of the car (Hasselqvist et al., 2016; Isberg et al., 2020). Due to their load capacity, cargo bikes can be important in driving children, transporting objects and combining errands (Hasselqvist et al., 2016; Baehler & Rérat, 2020b). However, aspects of the physical environment can affect the functionality of biking, such as bike lanes and parking spaces being too narrow for cargo bikes (Hasselqvist et al., 2016), or bicycling infrastructure in the residential area being generally inadequate (Paijmans & Pojani, 2021).

In some activity contexts, where car-based mobility is generally common, the carless applied strategies to bypass the need for a car. Ordering online with the home delivery of food and other supplies may reduce mobility needs, as someone else manages the transport (Hasselqvist et al., 2016; Paijmans & Pojani, 2021). Carless families in the 1990s also used the home delivery of large food orders, although such orders were not made online (Grahn, 1997). Furthermore, some families managed well in planning longer vacations by train and public transport (Grahn, 1997; Hasselqvist et al., 2016). In other contexts, the limitations of carless mobility were visible, either as desired trips were avoided or as the carless individuals and families turned to car use. These were often contexts in which car use was normative and expected. Among the intervention-study families who transitioned from a more-or-less car-based life to a carless life, some challenges recurred. One challenge was children's organised leisure activities, which were often managed by asking other parents for rides (Hasselqvist et al., 2016; Isberg et al., 2020). Other challenges involved travelling to a second home and getting around once there (Hasselqvist et

al., 2016) or visiting hardware stores for home renovation purposes (Isberg et al., 2020). Getting rid of things, such as bulky waste, turned out to work out tolerably well in apartment housing, due to material infrastructures of waste storage and removal (Hasselqvist et al., 2016). However, in detached housing with stronger car norms, waste management without a car was more challenging (Hasselqvist et al., 2016; Isberg et al., 2020). The families participating in a 3-month intervention study (Isberg et al., 2020) postponed these trips until they could use their cars again, while the families in a 1-year study asked someone else for a ride or temporarily borrowed a car (Hasselqvist et al., 2016). Sometimes, social activities were simply put aside (Hasselqvist et al., 2016; Isberg et al., 2020).

The findings from car-free developments in Germany and Switzerland revealed similar tendencies as those from the intervention studies: while car use was infrequent for the residents, the most common reasons for using a car were shopping for big or heavy things, leisure activities and visiting relatives and friends (Baehler, 2019). However, in these car-free housing areas, material aspects such as mobility infrastructure, parking for light vehicles and service supply were experienced as greatly facilitating car-free mobility (Baehler & Rérat, 2020b).

2.3.3 Shared car use and the asset of social networks

As the previous section illustrates, the carless occasionally use cars, when the car dependence of certain situations renders it necessary. This type of car use can involve commercial mobility services, such as pooling or renting; however, it most commonly occurs through borrowing cars or sharing rides with acquaintances. Ridesharing that involves social exchange can be termed 'self-organised ridesharing' (Shoshany Tavory, Trop, & Shiftan Yoran, 2020), in that it is not commercially or institutionally organised but rather is organised in a bottom-up manner. Pigalle and Aguiléra (2023) found such self-organised, acquaintance-based ridesharing to be more important than commercial ridesharing for short-distance trips for non-work purposes. For those not able to drive, being

unable to return the favour can be a hindrance in asking for rides (Payyanadan & Lee, 2018), possibly resulting in less participation in car-dependent activities. Therefore, in the absence of car ownership, being able to offer other services in return for rides as part of a social exchange (Lovejoy & Handy, 2011) can be important.

Children's organised leisure activities are a context in which access to rides from others can be an important resource. The families in the intervention studies tended to find this situation problematic, as they needed to ask for rides and found it difficult to return the favour (Hasselqvist et al., 2016; Isberg et al., 2020). The long-term carless families studied in Stockholm in the 1990s (Grahn, 1997) seemed to have largely adapted their lives to carlessness to a greater extent. When they received help with rides for soccer games and scout hikes, they returned the favour by performing other chores for the activity clubs, such as cleaning, baking or running a club café. This can be described as a form of social exchange that was mediated by the club, thereby facilitating participation in the club activities for carless families and their children.

Having access to a social network that can provide mobility support is an important part of a well-functioning carless life. Such support may consist of grandparents driving grandchildren, informal car sharing by borrowing a neighbour's car, or organising 'walking school buses' instead of chauffeuring (McLaren, 2016). However, the exchange of services in social networks can be complicated. In a study of recent Mexican immigrants in California, Lovejoy and Handy (2011) applied social exchange theory to analyse car use in the group, with a focus on their dependence on getting rides or borrowing cars. The researchers found that the immigrants 'relied on rides and borrowed cars to fill mobility gaps' (Lovejoy & Handy, 2011, p. 255). Some received rides as informal favours from friends, which sometimes worked well; however, like several of the studied Swedish families (Hasselqvist et al., 2016; Isberg et al., 2020), it could also be associated with emotions of guilt or inconvenience, which hampered such arrangements. Receiving help without explicitly compensating for it mainly occurs between friends and close relations and is more common

among women (Lovejoy & Handy, 2011). For others, such assistance is part of a negotiated exchange – that is, it involves an agreed-upon payment or other form of compensation, such as babysitting or cooking (Lovejoy & Handy, 2011).

Psychological and behavioural studies point to the importance of so-called 'descriptive norms' (i.e. perceptions of what others do and what is thus socially expected) in the tendency to rideshare, as there is a greater tendency to rideshare among those who perceive that others do it (Bachmann, Hanimann, Artho, & Jonas, 2018; Bulteau, Feuillet, & Dantan, 2019; Gheorghiu & Delhomme, 2018). Furthermore, Bachmann et al. (2018) found that a disposition to trust others increases the propensity to rideshare. Trust in others can be enhanced by a sense of belonging to the same group or a community, which was true for the immigrants in California studied by Lovejoy and Handy (2011). While that group of recent immigrants was low on mobility capital *per se*, their sense of community created a great will to help each other and an ease in making agreements such as an exchange of services without necessarily having a close relationship (Lovejoy & Handy, 2011). A similar mechanism was at work in the car-free housing developments studied by Baehler and Rérat (2020b). In those contexts, the community of non-car owners was an important asset for borrowing or receiving help with mobility equipment, organising deliveries, or coordinated, temporary car use. In the car-free developments, the social community was also important in that it created a culture in which carlessness was normal and unquestioned (Baehler & Rérat, 2020b).

2.3.4 Aspects of time and flexibility

Organising everyday life without a private car can create tensions with the view of time and flexibility associated with the car-oriented society. In a qualitative mobility biographies study of voluntarily carless individuals in the Vienna region, Sattlegger and Rau (2016) found that the studied individuals dealt with such car-based, time-related norms in various ways: by emphasising carless travelling *per se* as being time saving and

emphasising that in cities, it may in fact be faster to bike or take the subway than to drive a car (Sattlegger & Rau, 2016). The studied individuals also resisted car-based norms by emphasising the quality of travel time, viewing mobility as a social activity with health benefits and stressing the opportunity to spend time on, for instance, public transport as being productive or relaxing (Sattlegger & Rau, 2016). Similarly, the studied families in Sweden talked of mobility as an opportunity for daily physical activity, gaining place attachment and 'getting to know the city' (Hasselqvist et al., 2016, p. 1309). When travelling worked well, the journey itself could mean family time together, differently than in a car where the adults are occupied with driving: daily time spent on public transport was seen as an occasion for socialising and doing homework, for instance (Isberg et al., 2020). Holiday travelling by train was also described as an opportunity for children and parents to be together, as everyone could indulge in the journey on common terms (Grahn, 1997; Hasselqvist et al., 2016).

Many carless families experienced a significant need to plan and coordinate the activities of family members (Grahn, 1997; Hasselqvist et al., 2016; Paijmans & Pojani, 2021). The families in the Stockholm intervention study, who were carless for a year, described having a greater need than before to plan and coordinate routine trips, as well as longer journeys (Hasselqvist et al., 2016). For the long-term carless families in Grahn's (1997) ethnographic study, core strategies included 'well thought out planning, relatively fixed routines, and coordination in the family for long as well as short trips' (p. 254, author's translation). This more thought-out and coordinated lifestyle was experienced as being less stressful for some of the families in the intervention studies, as they did not constantly rely on flexibility and backup plans (Hasselqvist et al., 2016) and had a bus timetable to schedule with in the mornings (Isberg et al., 2020). However, for families with worse conditions, and for those whose carless travelling claimed a significant portion of the family's time together, life was found to be more stressful and less enjoyable without a car (Isberg et al., 2020).

2.3.5 Norms and social tensions

The social context has a significant impact on how well carless life functions, in several ways. While car-reduced or car-free neighbourhoods can offer socio-cultural contexts that support a carless life (Selzer & Lanzendorf, 2022), many carless individuals have found that the social norms permeating car-based society are markedly manifested in several everyday situations. The families in the Stockholm intervention study sometimes perceived that their carlessness was provocative to others in car-oriented contexts, making the families emphasise that they were part of a research project, and that they mainly did it for economic reasons (Hasselqvist et al., 2016). Being carless – and voluntarily so – as a family with children can be perceived as particularly norm-breaking, as this life situation is strongly associated with car ownership (Paijmans & Pojani, 2021; Prillwitz, Harms, & Lanzendorf, 2006; Selzer & Lanzendorf, 2022; Kent, 2024). For instance, being carless may mean that children need to be given more responsibility for their own mobility, which can sometimes be viewed as irresponsible (Hasselqvist et al., 2016). Nonetheless, children can also gain a sense of empowerment by learning how to get by on their own (Grahn, 1997; Hasselqvist et al., 2016).

Carlessness can create tensions in the family and with relatives. One of the families in an intervention study described how they could no longer help a grandmother with shopping, as they used to do when they had a car, and the task was now taken on by other relatives (Hasselqvist et al., 2016). This example illustrates how the ability to help others is an important benefit of owning a car, and no longer being able to do so may be a drawback in the choice of carlessness. Sattlegger and Rau (2016) also underlined the mutual dependence between family members in a carless household; if intentional carlessness is to work and be maintained over time, it must be agreed upon within the family. In fact, negotiating and agreeing on mobility practices in general is important in order for such practices to be maintained in the long term (Jensen et al., 2015). In extensive research, decision-making has consistently been found to affect activity and travel

behaviour more strongly than individual conditions alone (Dubernet & Axhausen, 2015).

2.4 Situating the thesis

This chapter illustrates the complexity of car dependence and its consequences, which involve the interplay of spatial characteristics, individual conditions and aspects of the activities and practices for which people travel. Considering the socio-demographic diversity of the carless population and the mobility variations demonstrated in previous research, it is evident that the conditions for managing without a private car are very uneven. For socio-economically vulnerable groups, carlessness is likely to coincide with car dependence in the residential environment, resulting in greatly impaired access to opportunities and causing social exclusion. Therefore, a mobility transition that reduces car dependence is key not only for mitigating climate change but also to ensure equal opportunities for welfare and quality of life.

The situation of the carless provides a powerful example for understanding how to enable a much greater extent of non-car mobility. The in-depth studies outlined here indicate that coordination, flexibility and using nearby amenities are important strategies in living everyday life without a private car. In some contexts, these strategies work well; in other contexts, however, being carless entails significant hardship. Intervention studies provide valuable knowledge on the implications of a temporary transition from car ownership to carlessness. The research on car-free housing developments outlined how carlessness functions in an optimal environment, informing new similar developments. However, very few studies investigate the conditions experienced by carless individuals for carlessness in the real-world settings of a car-oriented society. The extensive literature on carlessness indicates that the conditions for getting by without a private car are better in certain spatial contexts (Mattioli, 2014; Mitra & Saphores; 2019) and that there is a need for deeper knowledge of how these conditions are managed by the carless.

In conclusion, I seek in this thesis to contribute knowledge of how everyday life beyond the private car can be made to work in a car-oriented society, and what the limits of carless everyday life are. Thus, I choose to focus primarily on carless individuals who can be viewed as having the conditions to maintain a good quality of life, denoted in the research as *voluntarily carless*. Moreover, this thesis engages with mobility as a part of the *organisation of everyday life* and the activities and practices daily life entails. Some emphasis is placed on the sphere of leisure, which has been shown to be associated with extensive car use. The thesis contributes a further understanding of the conditions for mobility that lie beyond the use of specific travel modes or the layout of the built environment – that is, the temporal and spatial organisation of everyday life, which is shaped by needs and desires, individual constraints, social norms and what is considered to be normal practice.

Chapter 3. Theoretical perspective

This chapter introduces the theoretical approach of the thesis, which is designed to consider and analyse mobility as part of the organisation of everyday life. This approach draws on two traditions of thought – namely, time geography and social practice theory – which permits a dual perspective on mobility in relation to what people do in daily life.

Initially, I draw on time geography and the related activity-based approach to examine the situated conditions for mobility and accessibility from the perspective of the individual. With this approach, the everyday life of an individual can be seen as a sequential stream of activities in time, where the activities are carried out at varying locations and in interaction with other individuals, entailing the need to be mobile. An individual's situation, preferences, and access to different resources, combined with the spatial and temporal requirements of her needed and/or desired activities, thus shape her conditions for mobility and her accessibility of opportunities. In my application of time geography, I consider mobility to be *one* way of managing constraints and gaining access to opportunities. In addition to mobility, I take interest in other accessibility strategies as applied by carless individuals, such as the coordination of activities, the prioritisation of nearby alternatives and gaining access to opportunities virtually. This perspective is developed in Section 3.1.

Furthermore, I make the case that the pursuing of activities is not only part of individual lives but also of wider social practices, which are reproduced as individuals perform them. Thus, mobility is not just about getting from one place to another; it is also about 'integrating everyday life and the activities required of "normal practice"' (Shove, 2002, p. 9). As a result, what is considered 'normal practice' greatly steers society's expectations for mobility. I use social practice theory, which is developed in Section 3.2, to understand the sociality of mobility and the drivers of mobility and car use in relation to specific social practices. Simply put,

practice theory enables the understanding of more general meanings related to how activities are done and the materiality and competences they involve, by considering activities as performances of specific practices. Importantly, practice theory also offers useful concepts regarding how change may come about.

3.1 Time geography and the activity-based approach

3.1.1 Introduction

The activity-based approach in transport research largely stems from time geography (Ellegård & Svedin, 2012) and considers mobility as a means to participate in activities. In modern society, largely due to the dominance of car-based mobility (Dennis & Urry, 2009), the activities of everyday life are geographically scattered (Frändberg, Thulin, & Vilhelmson, 2005): for most people, even after the pandemic's surge of telework, the place where we live is not the same as where we work or go to school. Childcare institutions are located at additional places, as are sites for organised leisure activities, shopping and pickup locations for e-commerce, and places for culture and entertainment. Furthermore, social networks have become significantly more spread out than what has historically been the case (Frei, Axhausen, & Ohnmacht, 2009), and we may need to move about to maintain our social relations.

By acknowledging the interaction of mobility with the non-travel aspects of daily life (Fox, 1995), the activity-based approach shifts away from the view of human mobility as being steered by informed, rational choice (e.g. Bamberg & Schmidt, 1998). The sequence of activities that an individual partakes in within a day is shaped by her goals and intentions and her need to coordinate with other individuals, as well as by the constraints set by her resources and limitations. Being carless greatly shapes such constraints, as it entails the absence of the fast and flexible mode of transportation that structures society. Yet, I argue that there are strategies other than car-based mobility that can be applied to manage constraints

and gain access to opportunities. In this section, I draw on central time-geographic concepts to develop this line of reasoning.

3.1.2 Opportunity space and the potential constraints of carlessness

Torsten Hägerstrand's concept of *life paths* (1985) describes how all material entities – objects, human individuals, plants and animals – occupy space over time. Because two entities cannot occupy the exact same space, neighbouring entities affect each other's life paths, and life paths thus intertwine in what Hägerstrand has likened to a 'fabric of existence' (Hägerstrand, 2009). This is a powerful way of illustrating the inter-relatedness of humans, nature and technology; it also describes how human lives – and their mobility – are always situated, in time and space and in relation to each other. The interrelatedness of life paths manifests at all scales, from global networks of transportation to the organisation of societies and the spatial separation of different activities, and down to the focus of this thesis: the nitty gritty of how each and every person organises the activities of everyday life. Mobility can be understood as a way for individuals to move in the fabric of existence, while constantly being in relation to the life paths of other individuals and material entities.

Whereas the life path is essentially a visualisation of an individual's past, the *prism* (Figure 2) depicts an individual's opportunity space – that is, the opportunities that are potentially in reach for the individual at any given 'now'. In its basic form, the prism of opportunity space is shaped by 1) the place where the individual is presently situated – that is, her point of departure (in Figure 2 it is the home); 2) the future time when the individual will need to return to that place or be at another place; and 3) the speed with which the individual can move (Ellegård, 2019, p. 34). Here, the importance of speed indicates that the car is often superior to other modes of transportation in extending the individual's spatial reach. Biking and walking are slower modes; moreover, even though public transportation modes can be as fast or even faster than a car, they are not as flexible, as they require the user to adjust to timetables and stop

locations. Thus, a car owner can often be expected to have a larger geographic opportunity space than a carless individual.

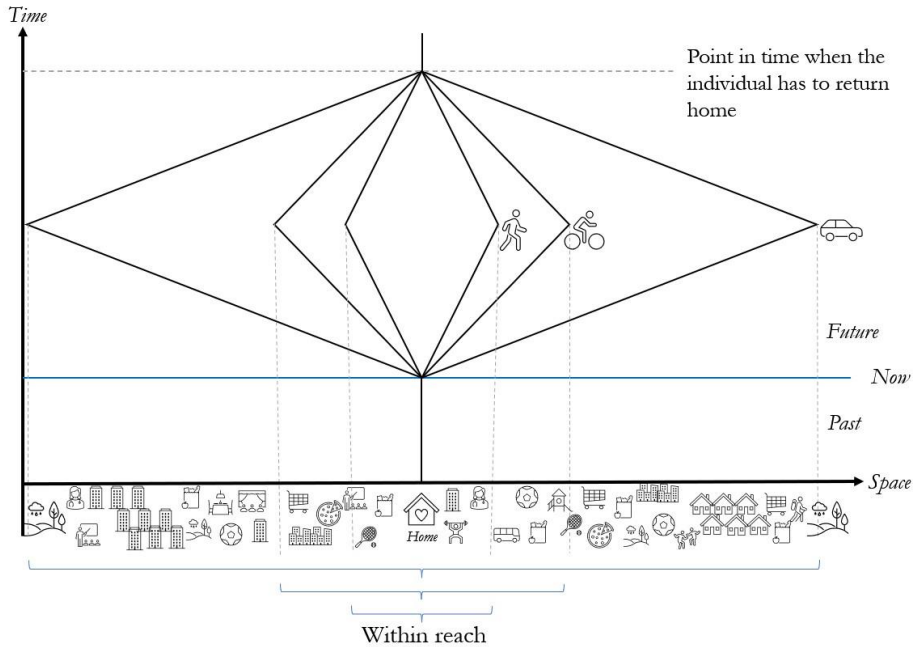


Figure 2: Prism depicting the potential opportunity space of an individual depending on the mode of transportation. The brackets at the base of the figure illustrate what is in reach for the individual on foot, by bicycle and by car. Developed from Hägerstrand (1970), Lenntorp (1976) and Ellegård (2019).

In a well-cited article on people's mobility conditions, Hägerstrand (1970) described the relation between speed and the constraints of capacity, coupling and authority that affect an individual's opportunity space. An individual's access to and ability to use different modes of travel to extend her reach are considered to be a *capacity constraint*. Other capacity constraints include bodily ability, economic means and the knowledge to master the travel mode – such as having a driver's license, understanding the timetables and payment system of public transportation, or knowing how to ride a bicycle. Being carless is a tangible capacity constraint, which is illustrated by the different opportunity spaces by different travel modes in Figure 2.

The private car greatly facilitates everyday coordination as a flexible mode of transportation with the capacity to carry people and things. Therefore, carlessness also shapes *coupling constraints* – constraints related to the need to bring individuals and/or things together, temporally and spatially, in the pursuit of activities. Coupling constraints highlight the individual's dependence on or responsibility for other individuals (Ellegård, 2019), such as the dependent relationship between children and parents and the associated requirements for coordination. Coupling constraints also consist of material needs, such as the need for ingredients to prepare a meal or equipment required for certain leisure activities.

Finally, being carless affects an individual's ability to manage *authority constraints*, which essentially stem from power relations (Ellegård, 2019) and comprise the rules, institutions and norms steering who can or should be in a certain place and when. Explicit authority constraints such as office hours, temporal limits to children's day care or the opening hours of a grocery store are likely to shape the prism for carless individuals more than for car owners. Furthermore, the more implicit expectations regarding the speedy and flexible mobility inherent in car-based social contexts can be challenging without a private car (Hasselkvist et al., 2016). Authority constraints also affect the non-car user in places that are designed for car-based mobility. In fact, the norm of having a car is largely inscribed in the modern landscape through the infrastructures car use requires and the arrangements of land use it enables.

While the constraints shaping a person's prism of opportunity space are highly individual, different life phases and life situations are likely to entail different sets of constraints, as the examples given thus far have hinted. Being a parent while pursuing a career is associated with many coupling constraints, while being an older retiree is likely to involve fewer of these. On the other hand, the latter life phase is often associated with increased capacity constraints in terms of economic resources and – with age – physical ability. These different constraints result in different consequences from carlessness. An individual's situations and phases of life also

shape the obligations, needs and desires that motivate intended activity participation in the pursuit of *projects*.

3.1.3 Activities and the projects they pertain to

Hägerstrand considered that human entities – that is, individuals or groups of individuals – differ from other entities in that they have the ability and drive to consciously plan the future (1985). He used the term *project* to describe 'the entire set of space/time uses of people, things, and room leading up to some goal' (Hägerstrand, 1985, p. 201). Thus, activities are separate, temporally and spatially situated actions to fulfil projects. Here, let us return to the idea of life paths that intertwine in the 'fabric of existence': by planning and setting goals, we humans imagine how this fabric will emerge in the future and adjust our activities accordingly. Projects vary in scale – from preparing a meal to establishing a professional career. They can be individual or collective, ranging from planning a family vacation to reducing polluting emissions from a factory. The intended results, as these examples illustrate, can be immaterial or material (Ellegård, 2019). The essence of a project is intentionality, and the motivation of intention is highly social and variable, driven by diverse aspects such as basic needs, self-realisation, care for others, business rationales or political conviction.

Thus, activities can be seen as the constituents of projects, and activities occupy space over time. In everyday life, projects therefore compete for space and time (Gil Solá & Levin, 2021) – in the lives of individuals, within households and organisations, and in society at large. This means that some projects are prioritised and tend to dominate, while others are set aside and sometimes fail (Hägerstrand, 1985). This dynamic of competition between projects has a bearing on mobility in ways that can be understood through the aspects of activities themselves. One such aspect is an activity's degree of fixity in time and space – that is, the extent to which the activity must be performed at a given time and/or place (Schwanen, Kwan, & Ren, 2008; Vilhelmson, 1997). In addition to such temporal and spatial boundedness, fixity depends on whether an activity

is perceived as mandatory or discretionary (Vilhelmson, 1999). Activities that are highly fixed, such as attending school or work, which can be both highly mandatory and highly bounded in space and time, often function as 'pegs' (Cullen & Godson, 1975) around which more flexible activities can be arranged. As such, fixed activities often pertain to dominant projects, which have a structuring role in the organisation of everyday life.

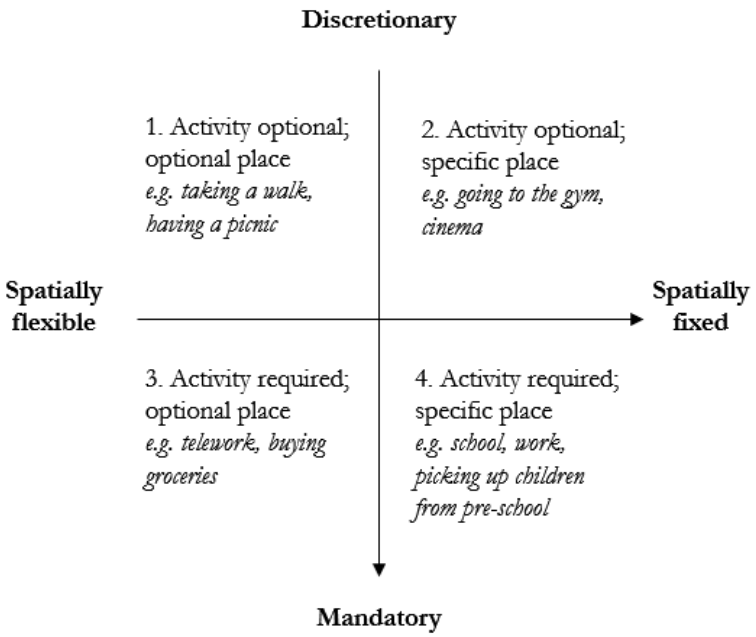


Figure 3: Classification of activities according to the degree of fixity in space and the degree to which activities are perceived as mandatory, where (1) is completely fixed and (4) is completely flexible. Note that the dimension of time is not considered in this figure. Developed from Vilhelmson (1999).

Individuals that lack the mobility resource of a private car can experience a greater need to arrange other projects and related activities spatially around the pegs of everyday life, which are typically the home and the workplace or school; otherwise, these other projects may fail. This arrangement is an example of an *accessibility strategy* individuals can use to conduct activities and fulfil projects when car-based mobility is less of an option.

3.1.4 Accessibility strategies beyond the private car

From an activity-based perspective, mobility is a demand derived from the need and desire to partake in activities. Accessibility, in turn, is the ability of an individual to reach intended activities. Following the time-geographic line of thought, I use the term 'accessibility strategies' to refer to the ways in which individuals overcome and adapt to existing time-space fixities and constraints – through mobility or by other means – to reach activities. These strategies are sets of short- and long-term decisions and priorities that are made by individuals and in households when organising everyday life. As Jarvis (1999) has noted, household strategies are not necessarily strategic, goal-oriented actions; rather, they can emerge over time with negotiations and decisions in the household. Such decisions may concern fundamental things, such as where to live, work and go to school, as well as continuous, day-to-day decisions regarding travel modes, leisure activities, socialising, consumption, and the timing and coordination of different activities. Notably, the importance of accessibility depends on what activities an individual needs and wants to partake in as part of the projects she is engaged in, which vary depending on the life phase of the individual.

Two basic types of accessibility strategies include 1) strategies based on speed and extended reach; and 2) strategies of proximity and coordination. The time-geographic prism (Figure 2) visualises how speedy and autonomous mobility grants individuals a larger opportunity space and the ability to reach opportunities further away. Relying on car-based mobility can thus be seen as an accessibility strategy based on *speed*. In a car-based society, this strategy dominates; it competes with accessibility strategies based on *proximity* (Haugen, 2012), which rely on geographic nearness and slow travel modes such as walking and cycling. Naturally, a proximity-based accessibility strategy is easier if there are more opportunities for activities in the vicinity of pegs – particularly the home. Carless accessibility is also enhanced by timing and coordination; for example, it can be aided by digital technology, outsourcing mobility to others in the social network, and seeking temporal flexibility to relax the fixity of

activities. Drawing on the time-geographic literature on car dependence and changing travel habits (Axhausen & Gärling, 1992; Jones, 1992; Neutens, Schwanen, & Witlox, 2010), possible elements of carless accessibility strategies can be identified, adding up to a locally oriented lifestyle (Vilhelmson, 2000): 1) Prioritising activities near the home and consequently opting out of activities far away; 2) seeking to reduce the fixity of activities by teleworking, for example; 3) avoiding travel, such as also by teleworking, or by e-shopping or making social contacts online; 4) coordinating several activities within one trip, in what is known as 'trip chaining'; and 5) obtaining support from a social network, such as by getting a ride when necessary or meeting friends and relatives near the home.

Importantly, these proximity-based strategies require certain resources or personal preconditions to work well. Examples of such resources or preconditions include having opportunities nearby (i.e. affording accessible housing), being eligible for telework (Elldér, 2019), being physically able to travel with non-car modes, possessing the tools and competences to use digital services and possessing a social network with mobility resources. As elaborated above, an individual's life phase and related projects also bring constraints that interplay with those of carlessness, rendering the lack of a car more or less limiting.

3.2 Theories of social practice

3.2.1 Introduction

To understand carless mobility in relation to the social practices that activities are part of, I apply theories of social practice – hereafter referred to as 'practice theory'. Practice theory is a diverse strand of thinking within social theory that can be traced to early 20th century thinkers such as Wittgenstein and Heidegger, and on to the works of Pierre Bourdieu and Anthony Giddens, among others. While these thinkers take different theoretical positions and engage with practices in very different ways, the

common denominator, as efficiently gathered by Reckwitz (2002), is essentially this: social life is considered to consist of what people do, rather than being found in text and symbols, interaction between people or the individual mind. My application of theories of social practice in this thesis is largely developed from more recent authors – mainly Schatzki (1996, 2010) and Shove and colleagues (Shove, 2002; Shove et al., 2012; Shove, Watson, & Spurling, 2015). The conversations between these and other scholars shape what can be viewed as a contemporary field of practice theory.

Before outlining my take on practice theory, I will briefly motivate my drawing on this contemporary field – rather than on the more widely known work of Bourdieu, for instance – for the purpose of the thesis. Bourdieu (1977) viewed social practices as an expression of *habitus*, a concept that embodies practical understandings, norms, rules of conduct, thoughts and motivations. In Bourdieu's view, habitus produces practices (Bourdieu, 1977). In Giddens' work, rules and resources form the structure that is iteratively producing and being produced by practices (Giddens, 1984, in Schatzki, 1997). The scholars I draw on here are similar in that they – unlike Bourdieu – view aspects such as understandings, rules and motivations as elements of practices themselves. Their work therefore aids my understanding of the social through *practices* as empirical entities that are in turn produced and reproduced by human action, rather than by a structure existing outside of practices (Schatzki, 1997). Instead, this structure consists of a dynamic nexus of practices (Hui, Schatzki, & Shove, 2017). As Shove et al. (2012, p. 5) concisely put it, this view on practices means that '…practices are not simply points of passage between human subjects and social structure. Rather, practice is positioned centre stage'. As such, the 'contemporary' field of practice theory lends itself to the empirical investigation and analysis of specific practices and how practices hang together. In this thesis, I specifically draw on practice theory to understand carless mobility in relation to leisure practices.

3.2.2 Entities, elements and the reproduction of practices

So, what is a social practice? Shove et al. (2012) distinguish between the *practice-as-performance*, as in the separate doing or carrying out of a practice, and the *practice-as-entity*, which denotes the wholeness of a practice. If cleaning is considered a practice-as-entity, then the single act of tidying up can be viewed as a performance of that practice. While the practice-as-performance is the action that reproduces the practice-as-entity, actualising and sustaining it (Schatzki, 1996), the latter emerges as a more complex analytical concept. For Schatzki, the practice-as-entity is 'a temporally unfolding and spatially dispersed nexus of doings and sayings' (Schatzki, 1996, p. 89). This nexus is linked by common understandings of explicit rules or instructions and by what Schatzki calls teleoaffective structures of 'ends, projects, tasks, purposes, beliefs, emotions, and moods' (Schatzki, 1996, p. 89). In essence, the teleoaffective structures of practices imply the ideas of purposes or the aim of practices. In relation to the time-geographic concept of project, which denotes the wants and goals of individuals, teleoaffective structures denote general understandings, which are implicit in practices, of how things are usually done; these understandings in turn structure the formulation of projects.

Largely building on Schatzki, Shove et al. (2012) suggested a simplified and useful conceptualisation of the practice-as-entity that consists of three elements: materials, competences and meanings. *Materials* can be objects, tools, hardware, and the body itself. *Competences* are understanding, know-how and practical knowledgeability. *Meanings* are related to Schatzki's teleoaffective structures, which have been framed by Shove et al. (2012) as the social and symbolic meanings of the performance of practices. A practice, such as gardening, exists as an entity, and its elements act as resources for those who practice it. The material element of gardening includes plants, tools, seeds and fertilisers. The competence element includes knowledge of the conditions required by specific plants, such as when to plant, how to fertilise and how to prune. The element of meaning includes ideas of what a garden is for, what plants are beautiful together, the status of having a garden and who is expected to tend to it. It is

through the performance of the practice – here, the moment of gardening – that the practice-as-entity is reproduced by its carriers or practitioners.

The idea that practices-as-entities are continuously reproduced through individual performances may signal stability, while a major transition towards reduced car use essentially requires change. With their conceptualisation of the elements of practices (Figure 4), Shove et al. (2012) have contributed a graspable view of the dynamics of practices. They elaborate how practices change as the links between the elements of a practice are broken and new links are made, thereby reconfiguring elements into new practices. Shove et al. take the practice of car driving as an example to describe such a process of change (2012, pp. 26–36): when the practice of car driving first took form, elements from the existing practice of driving a horse-drawn carriage, such as traffic rules and the construction of the vehicle, were integrated into this new practice. In the early days of car driving, competences related to the maintenance and repair of vehicles – rather than horse-handling competences – were necessary. As car engines became more reliable, these competences became less important, although the meaning of car driving was still coded as masculine, to some extent. Today, with car engines being largely computerised, the competence of car repair is mainly tied to professional practices. This exemplifies how elements of competence and meaning can travel between practices, showing that elements are somewhat more stable than practices (Shove, Pantzar, & Watson, 2012, p. 44).

Thus far, the dominance of car use has increasingly imbued meanings of individuality and privacy (Nitschke, 2020) into mobility practices and how such practices bundle with other social practices. Thus, one way of transitioning mobility towards reduced car use may be to disconnect the meanings of 'private' and 'individual' from the car in order to promote shared car use.

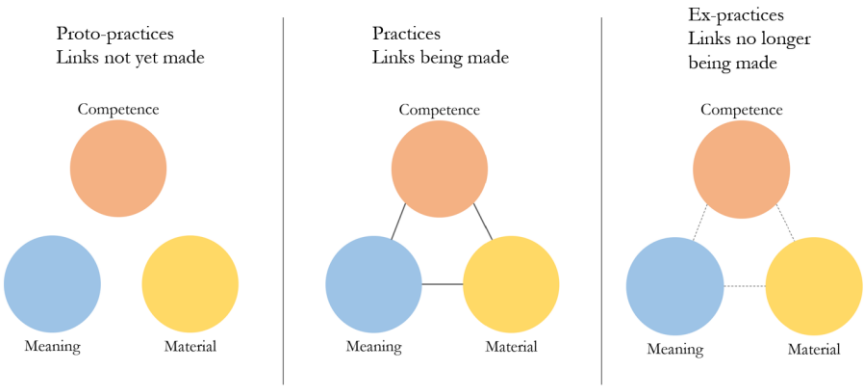


Figure 1: A simple model of the elements of social practices and how practices may be formed and reconfigured through the making and breaking of links between elements (Shove et al., 2012).

3.2.3 Materiality and the bundling of car use with other social practices

Obviously, the demarcation of practices-as-entities is a theoretical construct. The messy reality of social life means that practices are inevitably intertwined (Schatzki, 2010) and that no single practice can exist without other practices. Nevertheless, the theoretical conception of practices-as-entities makes it possible to analyse practices one by one and to examine how they bundle together and shape each other. Practices can bundle in many ways, such as by sharing meanings and competences, being performed in the same places or within shared infrastructures. The bundling of car use practices with other practices is an illustrative example – and one with high relevance to this thesis because it forms the conditions for carlessness.

Some practices are strongly bundled with car use, and material aspects are fundamental for this bundling. The inclusion of materiality in the analysis of social life that is enabled by practice theory, similar to time geography, aids in the analysis of car use and other forms of physical mobility. After all, an essential purpose of transportation is to move bodies and things

between places, which requires some form of physical structure to mediate the movement.

There are several ways of conceptualising the role played by materials in social practices. One way, according to Shove et al. (2012), is to view materials as an element of a practice. Take the practice of soccer as an example: the material element roughly consists of balls, goals, pitches, players and their personal equipment. This is a straightforward conceptualisation, but one that does not really assist in identifying the roles played by these material entities in the performance of the practice of soccer, let alone the relationship with other practices such as those of mobility. Another concept I find helpful for this task is that of *material arrangements*, as suggested by Schatzki (2010). Material arrangements refer to the ways in which the material entities involved in a practice are interconnected, including the materiality of other practices. In the case of soccer, the material arrangements would include the way the pitch is set up with goals for a match, as well as the localisation of the pitch and the infrastructures surrounding it (e.g. the road network, parking spaces, public transportation stops and bike lanes) and the distances and proximities this setup entails.

Importantly, the same material entities can figure as elements or in arrangements in relation to different practices. While road networks are material elements of professional practices such as planning and design, they also figure as material arrangements in relation to other social practices (Shove, Watson, & Spurling, 2015). These other practices can be mobility practices (e.g. car driving or cycling) but can also be practices that are enabled – or facilitated (Kent, 2022) – by mobility. For many social practices, such as soccer or wholesale shopping, cars and road networks are material features that are necessary without being directly involved in the practices themselves. The types of roles materials play in practices, as arrangements that are only indirectly involved but are necessary for practice performance, has been described by Shove (2017) as 'infrastructural'. Thus, the material elements of the car driving practice play an infrastructural role in countless social practices. These elements,

such as roads and parking facilities, are often very enduring, having been built from durable materials with considerable financial investments (Shove, Watson, & Spurling, 2015). Therefore, they embody and pass on specific ideas about normal and appropriate ways of life that mobility is part of: '…infrastructures (including roads, origins and destinations) serve to connect practices in space and time, thereby constituting new relations of car dependence' (p. 282).

To return to Schatzki, material arrangements 'prefigure' practices in the sense that they shape the conditions of specific actions, 'on such registers as easy and hard, obvious and obscure, tiresome and invigorating, short and long, and so on' (Schatzki, 2010). In that sense, mobility practices based on car use – and the material arrangements of infrastructures and localisations that they entail – prefigure the way other practices, both mobile and non-mobile, are 'normally' performed. The durable spatial and temporal structuring these material arrangements entail make it difficult for other transport modes to compete with the car in relation to many of the practices for which mobility is needed. These practices are thus rendered car dependent.

3.2.4 Car-dependent practices and leeway for change

Practice theory is often accredited with the advantage of being able to overcome the dichotomy of structure and agency in analyses of the social. By ascribing structure to the nexus of practices, and human action to the performances that reproduce practices, practice theory makes it possible to avoid a one-sided focus on either structures or individuals. Car dependence is commonly viewed as a characteristic of individuals and their car-based behaviours or life situations, or of places. Practice theory enables car dependence to be viewed instead as a characteristic of practices (Shove, Watson, & Spurling, 2015; Mattioli, Anable, & Vrostou, 2016). Car-dependent practices are social practices that are largely enabled by car use; importantly, as Kent (2022) notes, car-dependent practices also shape car use practices.

The bundling of car use with other practices is largely driven by the material arrangements described in the previous section, such as the durable infrastructures of roads and parking spaces and the localisation of destinations. The car itself also has an infrastructural role, not only through its speed and flexibility but also through its 'cargo function' (Mattioli, Anable, & Vrostou, 2016), which allows the transportation of things (e.g. footballs, training equipment) and dependents (e.g. children, pets). Consider the practice of golfing and its spacious golf courses, which are necessarily localised away from densely built environments and are thus often inaccessible without a car. Personal equipment, such as heavy golf bags holding sets of clubs, contribute to integrating the car with golfing.

Importantly, the materialities of practices are accompanied by meanings that spread across practices. The individual freedom and flexibility provided by the car thus contribute to the formation of meanings in car-dependent practices – within leisure, family, work life and consumption, for example. As a result, many social practices share meanings with car use, such as individual freedom, family or masculinity (Urry, 2004). Hui et al. (2017) captured this spread of meanings between practices with the concept of *suffusing*, which refers to how certain phenomena, such as meanings, pervade practices and spread to related practices. The suffusing of meanings can be expressed in doings and sayings and can be materialised in objects. In golfing, as in many other leisure activities, the norm of having your own equipment can be an expression of meanings of individuality and self-sufficiency that are enabled by car use and suffuse between these practices. In children's soccer, as another example, car use may *inter alia* express parental meanings of safety and care, giving rise to the commonality of chauffeuring children.

As established by Schatzki (1996), it is through the performance of a practice that the 'practice-as-entity' is continuously actualised and sustained by the ongoing integration of its elements. Shove et al. (2012) elaborates that it is through performances that practices may change or give rise to new practices, when links between elements are broken and

new links are made (Figure 4). Although it may be necessary to abandon some practices in order for a major mobility transition to be realised, the prospect of adjusting practices in a way that reduces car dependence seems to be a more manageable approach. In this vein, Spurling et al. (2013) have suggested the recrafting of practices by introducing new materials, skills and meanings alongside existing ones, in order to encourage more sustainable forms of performance.

As the literature review of this thesis emphasises, an aggregate analysis shows that many leisure activities are car dependent, in a way that is tricky to modify via policy measures. I suggest that a practice perspective may be useful here, as a way of considering how these practices can be recrafted. For this purpose, I identify two ways in which the recrafting of practices could be approached. The first is to recraft car-dependent practices in order to dissolve the infrastructural role of the car, thereby enabling the integration of other mobility practices in its place. This could be achieved by adjusting the spatial and temporal arrangements of the materiality of practices, such as where and when practices are performed and the need to carry equipment. For example, golf courses are difficult to move; however, enabling the sharing of golf equipment and storing it at facilities would reduce the need for the cargo function of the car, although it would simultaneously require the introduction of skills on how to administer such sharing and collective care for equipment. If procedures such as these were to become successful, supportive meanings – as a different sense of community and social inclusion – could emerge in the golfing practice with time. The second approach is to recraft car use itself as a practice. Because of the durability of golf courses and related infrastructures, car use may sometimes remain necessary to sustain the golfing practice. If car use were to be less associated with meanings of privacy and individuality, procedures of ridesharing would be more easily adopted.

These two recrafting approaches mutually reinforce each other. Because many car-dependent practices share meanings with other practices, through the process of suffusing (Hui et al., 2017), such changes might spread. A shifting of the use and meaning of the car as something that is

integrated in, for instance, leisure practices may thus lead to a similar shift in relation to other practices, potentially diverting our relationship with the car in a more sustainable direction.

3.3 Concluding remarks

In this chapter, I presented and elaborated on the two theoretical approaches this thesis draws on. The first of these approaches is time geography, which – through notions such as constraints and the degrees of fixity of activities – is useful for understanding the preconditions that allow individuals to manage everyday life without car ownership in today's society. The second approach is practice theory, which enables an analysis of the social practices that activities are part of and the elements these practices are composed of. With this dual perspective, I seek to cast light on the conditions, challenges and opportunities for change in both the lives of individuals and the social practices that constitute society. Empirically, my theoretical perspective involves approaching the real-world problem of the thesis – that is, everyday conditions for a sustainable mobility transition – from two directions. Although this perspective enables an understanding of the drivers and all the complexity of mobility, it has some implications for method and analysis that are discussed in the following chapter.

Chapter 4. Research design and methods

This chapter begins with a description of the exploratory, mixed-methods research design of the thesis, followed by an account of the methods applied in each study in 4.2, 4.3 and 4.4. Section 4.5 is a reflection on the realist perspective and researcher situatedness.

4.1 Research design

The empirical work underlying this thesis is designed using what may be termed an exploratory, sequential, mixed-methods approach (Creswell, 2014), comprising a sequence of three separate studies of which two are qualitative and one is quantitative. In this exploratory approach, each study builds on the findings of the previous study (see table 1), in order to expand the understanding of the everyday strategies and practices of the carless. The purpose of mixing methods is thus to enable the different techniques to complement each other and to formulate questions for further inquiry (Elwood, 2010). When compiled in the thesis framework, the findings from the three studies form a whole that can contribute to a better understanding of the present conditions for sustainable mobility. The theoretical approach of this thesis involves a focus on *what people do* that induces travel; however, this is done from two complementary perspectives, entailing a shift in the empirical focus. Through time geography (Studies 1 and 2), I analyse the conditions and strategies of carless individuals in relation to the contexts of constraints related to activities and life situations. From this perspective, *the individual* is the studied unit. The inquiry starts with a situated, qualitative investigation of voluntarily carless parents, which is followed by an exploration on a larger geographic scale to grasp more general patterns of mobility in different contexts. Through practice theory (Study 3), I qualitatively investigate the practices that are reproduced by continuous performances and how carlessness shapes these performances. In the third study, individuals are

thus interviewed as carless performers of specific practices, and *the practices* are the studied unit.

Table 1: Overview of the three studies.

Title of paper	**Aim**	**Research question(s)**	**Method and data**
S1: Accessibility strategies beyond the private car: A study of voluntarily carless families with young children in Gothenburg	To explore how everyday life is organised and experienced by households that have voluntarily decided not to own a car.	How is everyday life managed and what accessibility strategies are practiced in the absence of a private car?	In-depth interviews with eight parents Spring 2017
S2: Car use of the carless in Sweden: Everyday conditions for reducing car dependence	To explore carless mobility patterns, including the occurrence of car use, in relation to different everyday life contexts.	How is mobility managed by carless Swedes in relation to specific everyday projects and life situations? In relation to these everyday projects and life situations, what is the role of the car and what forms of shared car use do the carless engage in?	Descriptive statistical analysis Swedish National Travel Survey 2011–2016
S3: How can ridesharing be facilitated in car-dependent practices? Insights from carless participants in organised leisure	To identify how car-dependent leisure practices with an organised form can be performed more sustainably by means of ridesharing.	What are the existing procedures of ridesharing in scouting, orienteering and children's soccer? What sources of friction exist within ridesharing in the studied practices, and how can ridesharing be facilitated?	In-depth interviews with 25 leisure practitioners Winter 2021–2022

The thesis aim called for a qualitatively driven research design. The emphasis is on in-depth interviews, due to this method's ability to contextualise everyday strategies and practices. However, the lack of extensive knowledge on carless mobility in the Scandinavian setting also required a quantitative analysis in order to acquire a more extensive understanding of the conditions for carless mobility. This extensive understanding helped to identify the focus of the third study; ambiguities in the findings thus far called for an in-depth approach with a focus on leisure activities. The added perspective of the practice theory approach proved useful for understanding this somewhat elusive sphere of everyday life and related mobility.

4.2 Study 1: Interviews with voluntarily carless parents

4.2.1 Sampling

The population of carless families in Gothenburg is quite dispersed, which made the sampling procedure challenging. To obtain a sample composed of parents representing families with similar geographic conditions, a first attempt was made to reach respondents from the same residential area. A semi-central neighbourhood with rented apartments of varying size was identified. Selection questionnaires (n=220) were distributed among apartments that were known to be large and therefore likely to be family residences. The questionnaire asked for non-car-owning parents that were willing to participate in an interview study. No answers were received, likely due to a small representation of the sought-for population in that area. Instead, a request was made in a Facebook group for cyclists in Gothenburg, consisting of about 3000 members. Seventeen people showed interest in the request; of these, six people were selected. The selected individuals had at least two children below their teens and represented an even gender distribution. One additional respondent was found through a carpooling organisation, and a further individual was reached through personal contacts. In the final stage of the interview period, insights into the possible temporariness of carlessness motivated

an interview with a parent of somewhat older children. One of the respondents was chosen because the family recently sold its car, making the respondent able to provide information on aspects of the decision-making process toward voluntary carlessness. The sampling method was convenient in character but purposeful, as it enabled continuous sampling to ensure theoretical saturation.

All the respondents live in different yet central or semi-central parts of Gothenburg, with direct access to public transport and infrastructure for non-motorised transport modes. For reasons of privacy, the specific locations of the residences and workplaces are not presented. To provide geographical context, the home districts of the respondents are presented in a map in the paper (Appendix A).

4.2.2 Interviewing, analysing and writing up

The interviews were guided by a standard set of questions (see Appendix B for the interview guide), which allowed the conversation to evolve by following the reflections of the participants. To cover the topic and aim of the study, the questions were structured around a set of themes: mobility practices, social relations, proximity preferences and general questions about carlessness, such as motivations and thoughts about the future. The interviews were recorded with the permission of the participants. In close connection to the interviews, notes were taken about the specifics of the individual respondent's everyday context, which might have influenced the answers.

While transcribing the recorded interviews, I made initial reflections on patterns in the data, thereby beginning the process of analysis in an early stage. Subsequently, computer software was used to thematically code the data. The themes were initially guided by the research questions; as the analysis proceeded, I defined additional themes and sub-themes. The themes are strongly interrelated, representing different aspects of similar topics; thus, the coding of the data contributed to developing the theoretical framework for the study (see Table 2).

Table 2: Examples of coding themes, sub-themes and related quotes (Study 1).

Main themes	Sub-themes	Example quote extracts
Mobility practices (initial category)	Car clubs, renting, carpooling Bicycle Public transport Walking	Karin: '[…] so we joined the car club so that I could practice driving.' Anders: 'In comparison with public transport, you're more flexible [on the bicycle], and the exercise is a bonus, of course.'
Accessibility strategies (initial category)	Proximity ICT/virtual accessibility Home delivery Social relations Flexibility (time and space) Planning and coordination	Petra: 'Well, I would say that we value [nearness] very high. To avoid needing a car but also because it feels free.' Henrik: 'We buy almost everything on the Internet nowadays when it comes to food.'
Time-space constraints (initial category)	Capacity Coupling Authority	Eva: 'It is almost impossible to have a summer house or even rent a summer house if you don't have a car.' Viktor: 'You don't need to get many meters away from home to be forced to cycle in the street, and you worry as a parent when your children do that, naturally.'
Emotions, norms, values	-	Eva: 'I also feel like we just have to get out of this car dependency as a society. It needs to be possible.' Amanda: 'I really don't like that car dependency, I really like to be able to get around by myself.'
Children	-	Henrik: 'We used to take long walks in the city like that, with one in the stroller and one on a balance bike or so.' Amanda: 'My kids don't like to go by car.'

The process of coding involved decontextualising the material in order to make sense of it (Crang, 2003). To maintain contextual awareness, relevant characteristics and circumstances of the respondents are presented in a table added as an appendix to the paper; these include the family composition, residency and school/preschool situation.

4.3 Study 2: Analysis of the Swedish National Travel Survey

4.3.1 Data and unit of study

The second study is a statistical analysis of the Swedish National Travel Survey, which was conducted by Transport Analysis, a Swedish governmental transport policy agency. The study comprises pooled data from the survey years 2011–2016, including about 64,000 respondents and 120,000 trips. The survey was implemented through telephone interviews with individuals aged 6–84, with a response rate of 38% for the years 2011–2014, which declined to 32% in 2015–2016. The database consists of basic information about individuals (e.g. gender, age, car ownership, education and employment) and households (e.g. income, children and housing). It also includes information on trips made on the studied day, such as the purpose of the trip, the means of transportation and the trip distance. While the database contains information that could be defined as sensitive, such as disabilities or employment status, no information enabling the identification of specific individuals is traceable in the data (Trafikanalys, 2017).

The dependent variables are aspects of trips made by adult members of carless households – that is, individuals who are 18 years or older and who live in households without a registered car. The research questions are answered through bivariate analyses and a basic logistic regression analysis. The bivariate analysis (see Table 3 for dependent and independent variables) compares the mobility of carless individuals with that of car owners – where the latter are defined as individuals in households with one or more registered cars in use – in relation to specific everyday projects and life situations. These activities and life situations are defined in accordance with the constraints that have been found in previous research to affect mobility and activity participation and that can be assumed to interact with the constraints of carlessness. The mobility of the carless individuals is expected to differ significantly from that of car owners; however, comparing them in different contexts can highlight whether

differences shift with other constraints. Thus, this approach enables the identification of contexts in which carless individuals adjust the activities of everyday life to cope with their mobility conditions.

In the regression analysis, the car trips made by the carless are used to determine what independent variables related to socio-economic conditions, projects and life situations are associated with a trip being made by car.

Table 3: Definitions of dependent and independent variables for the bivariate analyses (Study 2).

Dependent variables	**Measure**
Modal split	Share of trips (%) by walking, bike, public transport, car and other modes.
Trip distance	km/trip, median*
Trip chaining	Number of trip units/trip, mean**
Trip frequency	Number of trips/day and person, mean

Independent variables	**Specific definition**
Everyday project	Work or school
	Material flow
	Maintaining social relations
	Leisure (vacations excluded)
Life situation	Young adults (aged 18–30 years, no children, not living with parents)
	Parents with children at home (aged >18 years, parents, children living at home)
	Retirees (aged 65–80 years, not employed)

* For trip distance, the median is used (not the mean) in order to avoid the influence of extreme values and because the focus of the study is on everyday trips rather than the occasional longer journey. ** Trip units are parts of a trip that are divided by different travel modes rather than destinations. For instance, walking 1 km to the bus stop and then riding the bus to work would include two trip units.

4.3.2 Limitations

Large parts of Sweden are very sparsely populated, and carless life is likely to be associated with isolation in these areas. The analysis is therefore geographically delimited to urban and semi-urban municipalities in Sweden, based on a classification made by the Swedish Association of Local Authorities and Regions (see map in Paper 2). The representation of non-car owners is lower in the excluded municipalities, which are classed as small towns and rural municipalities, at 8.6% compared with 16.9% in Sweden.

The analysis is somewhat limited by the data and the focus of the study. Initially, the intention was to investigate the *intersection* of projects and life situations, as such an investigation could answer questions regarding, for instance, how carless parents handle specific everyday projects and whether carless young adults perform mobility for social activities with more ease than carless retirees do. However, the limited number of carless individuals did not allow for such a fine-grained analysis, and the complexity of such questions required more in-depth methods than were utilised in this study. Similarly, the data on car trips made by the carless in relation to projects was limited, making it difficult to adequately scrutinise this topic.

4.4 Study 3: Interviews with carless practitioners of organised leisure

4.4.1 The Covid-19 pandemic

The data for the third study was collected from December 2021 to April of 2022. During this period, there was an extreme spread of Covid-19 in Sweden, accompanied by relatively strict restrictions regarding home quarantine and working from home. Thus, the timing of the study affected its design and findings in two main ways: First, due to the pandemic, most interviews were carried out online via a video-conferencing platform. Second, people's performance of leisure practices was sometimes affected

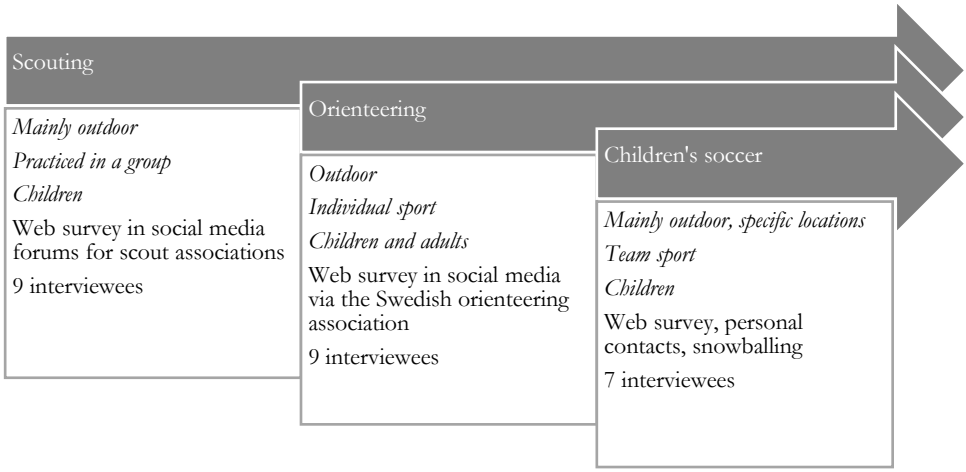
by the pandemic. Because the studied practices are all performed outdoors and the Swedish approach to pandemic restrictions never involved strict lockdown, they could be maintained, but adjustments were sometimes made and are present in the study findings. During certain periods, the pandemic affected people's opportunity and preference to travel using public transportation, as well as their use of ridesharing, which sometimes had consequences on their performance of practices.

4.4.2 Sampling

The sampling procedure for the study (illustrated in table 4) focused partly on what practices to study and partly on the units through which practices could be understood, i.e. the carless performers of the practices. As described by Hui (2016), when studying social practices, sampling may occur in a stepwise and overlapping manner. For this study, the practice of scouting was selected first, as it is an outdoor-oriented, organised leisure practice that is collectively performed. Moreover, this practice is focused on children and youth – a factor that has been shown to be a driver of car use (Hjorthol & Fyhri, 2009). A brief web questionnaire was published in several online forums of scout associations with the purpose of recruiting interviewees for a study on scouting without a private car. Out of the respondents to the survey (n=78), those who were willing to be interviewed and provided their e-mail address or phone number were contacted; of these, nine were interviewed. While conducting these interviews, orienteering was selected as the next practice to be investigated. Orienteering differs from scouting in that it is a sport that is practiced individually and by people of all ages. A similar sampling procedure was carried out, with the survey being adjusted to the practice of orienteering and then published on the Facebook site of the Swedish orienteering association. Of the respondents (n=70), nine orienteers were recruited for interviews. Carrying out these interviews clarified that studying the carless practitioners of a team sport would be an important complement to the study. Soccer was then selected, as it is a major team sport that is mainly practiced outdoors but in a completely different material setting than scouting and orienteering. Assuming that many adult

soccer players are at an elite level, children's soccer was selected; thus, the interviewees regarding soccer are all parents. Recruiting carless interviewees in children's soccer turned out to be a challenge, mainly due to problems with gaining access to communication channels to disseminate the web survey. Therefore, the survey (n=15) was supplemented with snowballing via personal contacts, and seven interviewees were recruited in total.

Table 4: Illustration of the sampling procedure (Study 3).



As this study focuses on practices, socio-demographic representation was not the main criterion of the sample; rather, the aim was to gain the most complete understanding of the practices as possible (Hui, 2016) and of how they relate to car use. Different roles in relation to practices and varying levels of experience were sought as far as possible. Nevertheless, the focus on carless practitioners of outdoor leisure practices had consequences for the geographical composition of the sample because geography affects whether such practicing is possible at all without a private car. Therefore, the experiences reported in this study mainly – but not solely – took place in large cities or their surrounding areas. Still, several interviewees described previous or current experiences in smaller Swedish towns.

Table 5: Examples of coding themes, sub-themes and related quotes (Study 3).

Main theme	Sub-theme	Example quote extracts
Leisure practices	Meaning	'You come to us as yourself, you do what you can do, and we'll support you with the rest. In the group.' (Kristine, scout leader)
	Material	'[…] a lot of people had cars, and you thought very big, somehow, you thought you had to bring a lot of things, like.' (Viktor, former scout and leader)
	Competence	'I've taught quite a lot of beginners courses and such activities myself and, I mean, there is so much you have to try to teach people for them to even be able to make it through a competition.' (Sara, orienteer)
	Temporal and spatial arrangements	'[…] [competitions] can often be in real forest, what orienteers consider to be good terrain, it can be wilderness terrain, often quite a bit away from public transportation.' (Josef, orienteer)
Ride-sharing	Procedures	'[…] we have a site on Facebook where you wrote, write it up. Who has a car available and such, who can pick [the children] up and those things.' (Maggie, soccer parent)
	Social aspects	'Because I don't like not being able to choose who to ride with. If I sign up there [on the club website], anyone can contact me and say 'I can pick you up'.' (Sofie, orienteer)
Norms and expectations on mobility	Within leisure practices	'…well, the norm is that people can participate, so. And not having a car is … well, you don't consider whether people have a car or not.' (Elsa, orienteering parent)

4.4.3 Interviewing, analysing and writing up

As mentioned above, most interviews were carried out via a video-conferencing platform. Three interviews were conducted outdoors near the interviewees' home or workplace, two were carried out at cafés, and one interview involving two cohabiting individuals was carried out in their home. Virtual interviewing can be seen as a limitation, because it hampers the expression and interpretation of body language and places more burden on eye contact (Gray, Wong-Wylie, Rempel, & Cook, 2020). However, it also provided some advantages. The people who were

interviewed online were situated within their own space – whether in their home or, in a few cases, in their workplace – which may have reduced the effects of the environment on the conversation and the power relationship between interviewer and interviewee. It may also have made it easier for the interviewees to talk about the everyday topic of the interview, as they were present in their everyday setting. Furthermore, the virtual medium facilitated the interviews in that no time or effort was needed for travel. It also enabled a greater geographic spread of the sample because distance was not an obstacle for participation.

All the interviews were recorded, with the interviewees' consent, and the recordings were continuously transcribed and analysed using computer software. The analysis was initially guided by the elements of practices (Shove et al., 2012), materials, meanings and competencies captured by the respondents' descriptions of the practice. Mobility in relation to practices, through ridesharing and other means, was then analysed and related to the elements. In the relation between ridesharing and leisure practices, the spatial and temporal arrangements and social aspects of the studied practices emerged as central themes (Table 5).

4.5 Realist perspective and researcher situatedness

This thesis draws on a realist epistemology, which considers that reality exists regardless of our knowledge of it, and that the researcher's consideration of reality will affect the results (Sayer, 1992). Due to the immense complexity of social reality, the researcher must first choose the so-called 'units of reality' to investigate in order to illuminate the matter under research (Sayer, 1992). The units I have decided to study – namely, carless people in urban environments in Sweden, certain categories of activities and specific organised leisure practices – will result in different findings than if I were to study carless people in rural environments in another country or with a different classification of activities, for example. This difference in potential results does not mean that some findings are truer but that the validity of the findings is specific in relation to the questions asked or the unit studied. The questions I ask, the theoretical

concepts I apply and the terms I use for the phenomena I encounter proceed from an *a priori* understanding of reality, which enables the identification of certain regularities.

The explorative design of this thesis embraces the realist standpoint, which holds that preunderstandings are always present. Reiter (2017) has asserted that a fully explorative approach without theoretically or normatively derived preunderstandings is impossible, because these preunderstandings inform the formulation of questions and the analysis of answers. In this work, the theoretical preunderstanding is as follows: people's demand for mobility is derived from their needs and wishes to partake in activities that are temporally and spatially scattered, entailing the performance of established – yet dynamic – social practices. There is also a normative preunderstanding underlying this work. In the opening paragraph of the thesis, I assert the 'need for a sustainable transition of the mobility system'. While there is a widespread societal agreement on the need for sustainability, the matter of what the problem is and how it should be approached is more disputed. My normative understanding entails the assumptions that a) car dependence is a problem with social and environmental consequences, and b) that, as a response to this problem, it is desirable and possible for more people to reach the activities they need for a good quality of life without necessarily owning a car. As with all normative understandings, this can be problematised. An initial idea for the thesis was to identify a type of life almost completely adjusted to the car-free accessibility of activities. However, the extent and unevenness of car dependence means that such a life would have to be extremely privileged, be extremely constrained and/or entail that car use was displaced onto others; thus, this initial idea presented a dilemma concerning the potentially conflicting aspects of social and environmental sustainability. This insight raised questions regarding how, as a response to the ecological *and* the social externalities of excessive car use, a different relationship with the car could be normalised – one that would depart from a reliance on private car ownership and use.

The researcher's perception of reality, which (according to the realist perspective) affects the research findings, is shaped by the situatedness of the researcher – that is, her personal experiences and social positions. The researcher can acknowledge this situatedness by being transparent and reflexive regarding her experiences (Catungal & Dowling, 2021). My social positions that I consider to have most prominently affected my formulation of the research problem and my choice of the studied units include being a woman, a parent, ethnically Swedish and middle class, as well as having a strong interest in sustainability issues. I have actively sought to minimise the influence of my positionality on the sampling and analysis procedures in the qualitatively oriented studies within this thesis. My situation in everyday life may also have affected the direction of the explorative approach in the thesis work. I am part of a car-owning household; during my time as a doctoral student, my family grew and we needed to change residences, thereby changing the layout of our everyday geographies. This shift undoubtedly gave me greater insight into the necessity of the car in many parts of the societal structure, shaping the direction of the thesis toward car-dependent practices in the third study.

Chapter 5. Paper summaries

Paper 1

The first paper opens the inquiry into the conditions of carlessness. It is based on the premise that car-based mobility is only one of many ways of accessing the opportunities in everyday life, and that alternative accessibility strategies can be identified – hence the expressed focus on voluntary carlessness. The aim of the paper is to explore how everyday life is organised and perceived by voluntarily carless households with complex travel needs, with a focus on dual-income families with children living in the urban setting of Gothenburg, Sweden.

As parents with young children, the respondents have complex mobility needs, being in a life period when a car is often acquired. Through their voluntary carlessness, they exemplify how sustainable mobility in terms of car-use reduction can be achieved at the individual household level, within what spheres of daily activities this is possible, and what benefits, efforts and tensions ensue. They also illustrate important compromises, such as a continued reliance on various forms of car transport on certain occasions. The research question guiding this paper is: *How is everyday life managed and what accessibility strategies are practiced in the absence of a private car?*

Drawing on eight in-depth interviews with parents in Gothenburg, the paper investigates how eight carless families organise their daily living and how they establish routines in the stream of mandatory and discretionary activities that make up everyday life. Through a time-geographical theoretical lens, the accessibility strategies applied by the studied families are scrutinised, and the perceived implications of being voluntarily carless for daily living are identified. Accessibility strategies, which comprise a central concept of the paper, are understood as the ways in which individuals overcome or adapt to existing time-space fixities and constraints when organising everyday life. The paper establishes that the

families use largely proximity-oriented strategies and combine various practices to manage time-pressed everyday life. Notably, the families' adaptation is considered to be well functioning in the spheres of mandatory activities and bounded routines (related to work, school and consumption). Important strategies for mandatory activities include flexible work arrangements, home delivery and trip chaining, and prioritising proximity. However, the families' carlessness is associated with relatively more friction and perceived inconvenience in regard to free-time activities. In relation to these activities, the families adapt to engage in activities within reach, conform to high-speed mobility expectations when necessary and sometimes rely on the mobility of others. For free-time activities, they practise forms of car use to manage some contexts, through renting, borrowing, car clubs or getting rides from social relations.

The findings of Paper 1 underscore the situatedness of carlessness and the importance of the inherent constraints and fixities of different everyday life projects. They also highlight important resources that aid the families in refraining from car ownership, such as having a social network, being able to choose an appropriate residential location and flexible working arrangements. Moreover, shared forms of car use still play a role in the lives of these carless families. The findings of the paper provide an important basis for further inquiry into the everyday conditions for a mobility transition which is the aim of this thesis.

Paper 2

The second paper is an extensive inquiry into carless mobility in non-rural Sweden. It draws on the different implications of carlessness in different activity contexts that were found in Paper I and on the fact that car use still seems to play a role in the lives of the carless. The aim is to explore carless mobility patterns, including the occurrence of car use, in relation to different everyday life contexts. Using data from the Swedish National Travel Survey 2011–2016, we scrutinise mobility in relation to a) important everyday projects in the carless population, and b) three groups of carless individuals expected to be subject to different sets of constraints

due to their life situations: young adults, parents with children at home, and retirees. The research questions are: 1) *In comparison with those of car owners, what are the mobility patterns of carless Swedes in relation to specific everyday projects and life situations?* 2) *In relation to these specific everyday projects and life situations, to what extent is the car used by the carless?*

The dependent variables used to analyse mobility are *modal split* (i.e. walking, cycling, public transport, car and other modes), *trip distance* (i.e. median kilometres), *trip chaining* (i.e. mean number of trip units per trip) and *trip frequency* (i.e. mean number of trips per person and day). The *share of car use* in the modal split, in combination with trip frequency as a measure of activity participation, is used as a proxy for car dependence. The analysis also examines how non-car owners gain access to cars and their roles as drivers and passengers, suggesting forms of shared car use in relation to the constraints of everyday life. To better understand the mobility of the carless, it is compared with that of car owners.

Theoretically, the analysis was performed from a constraint-based perspective on mobility, rooted in time geography. Thus, the activities are grouped into central everyday projects with differing conditions for fixity and constraints, as follows:

1) The *work or school* project, involving activities that are generally mandatory and associated with high levels of temporal and spatial fixity;
2) Activities related to the project *material flow* – that is, the movement of things due to, for instance, the acquisition and disposal of consumer goods – which can be described as routinised without being particularly fixed and often require the transportation of things;
3) The project *maintaining social relations*, including activities whose main purpose is getting together with friends and family or escorting others. These activities are presumably much less routinised than work, school or material flow activities, and are more flexible than those pertaining to work or school.

4) The project *leisure*, including free-time activities such as hobbies, visiting cafés, physical exercise and cultural activities – activities that can be expected to be quite flexible.

Our findings reveal that the constraints associated with different projects and life situations play a role in shaping carless mobility and the feasibility of a carless life. The limits to carless mobility can be discerned from car dependence in specific situations that inhibit activity participation or induce car use, while carless mobility seems to function more smoothly in other contexts. Non-car owners manage the project of the material flow (e.g. buying food and disposing of waste) differently than car owners, by using nearby services and little car use. Maintaining social relations, on the other hand, is car dependent and seemingly more constrained for the carless than the other projects are. Leisure activities seem to be only weakly car dependent for both the carless *and* car owners. Furthermore, the mobility implications of carlessness differ depending on life situation. Although non-car ownership affects mobility in all three studied groups, young adults appear to be the least affected by carlessness, while the activity spaces of carless parents are quite strongly reduced in terms of trip distances. The largest effect of carlessness on trip frequency is found among retirees, suggesting that their activity participation is more affected than that of the other groups by not owning a car.

The finding that trips made for leisure are not overly car dependent somewhat contradicts the fact that, in terms of total mileage, a large share of car use in Sweden has been found to be for the purpose of leisure (Strömblad et al., 2022; Trafikanalys, 2022). Following this finding, it can be assumed that the leisure project holds potential to be adjusted to align with more sustainable mobility. The voluntarily carless in Paper 1 expressed experiencing hardship in relation to some leisure trips, and so it is motivated to further investigate the potential to facilitate sustainable mobility in relation to specific leisure practices.

Paper 3

The third paper focuses on ridesharing as a strategy that could contribute to reducing private car use in the car-dependent moments of leisure practices. While some leisure practices can potentially be done differently to reduce car use, other practices are so tightly bound with the car that they may be difficult to maintain without it. For the latter occasions, ridesharing may be a solution, and the potential of ridesharing is expected to be particularly pronounced when leisure practices are performed in an organised form – that is, within an association and at common times and locations. The aim of the third study was thus to identify how car-dependent leisure practices with an organised form can be performed more sustainably by means of ridesharing. The study draws on semi-structured, in-depth interviews with 25 adult, carless individuals who are engaged in scouting, orienteering and children's soccer as parents, leaders and/or through their own performance. The studied practices share the feature of being partly car dependent for reasons such as equipment requirements, spatial and temporal arrangements, and/or inherent norms. The following research questions guide the endeavour: 1) *What are the existing procedures of ridesharing in scouting, orienteering and children's soccer – i.e. how is ridesharing usually done within these practices?* 2) *What sources of friction exist in the bundling of ridesharing with the studied practices, and how can ridesharing be facilitated?*

The study uses a social practice theory perspective to understand car dependence as a characteristic of practices rather than of individuals or places. Practices of mobility and car use are understood as being bundled together with other practices through the temporality and spatiality of material arrangements, as well as with the elements of material, competence and meaning that make up leisure practices. While the paper problematises exaggerated car use in leisure practices, it also acknowledges that some practices are so integrated with car use that they may be difficult to maintain without it. In these cases, ridesharing is a way of reducing actual car use. To support extensive increases in ridesharing, however, practices must change in such a way as to allow individuals to have a

different relationship with the car. Rather than considering mobility practices *per se*, the paper thus departs from leisure practices that are facilitated by car use and considers how such car-dependent practices can be recrafted to redefine the role and use of the car. In their performance of these leisure practices, carless individuals participate in the continuous reproduction of the practices, and their performance may hold potential for the reconfiguration of practices-as-entities.

I found that ridesharing was an important resource for the carless practitioners, as it occurred to varying extents in relation to all three studied practices. Significant variations between the practices regarding ridesharing procedures were mainly related to how ridesharing was coordinated – whether it was handled as a joint project or as a concern for individual practitioners in need of a ride. Notably, the paper shows that, while the material arrangements and elements of leisure practices are the predominant drivers of car dependence, the elements of competence and meaning are crucial for the feasibility of ridesharing. These two elements are important sources of friction in ridesharing that are not commonly noticed and can be derived from an individualisation of responsibility for ridesharing. Meanings of community and social inclusion – which were particularly strong in the scouting practice – allowed mobility and necessary car use to be included in the practice itself, thereby rendering ridesharing a matter of course.

The frictions in the bundling of ridesharing and leisure practices that were identified in this paper involved experiences of being a burden, being 'in the hands of others', feeling that the ride is given as a personal service and feeling indebted. This aligns with the findings in paper 1. Carless practitioners manage these frictions by either avoiding ridesharing or relying on well-established contacts. However, experiences from the scouting practice in particular demonstrated that ridesharing can be facilitated when mobility is performed collectively as included in the leisure practice, through formalised coordination and common pickup locations.

The findings of this study illustrate the importance of looking into specific leisure practices, rather than investigating leisure as a single category of trip purposes, in order to understand how car use could be reduced in this sphere of everyday life. To facilitate ridesharing, the study shows there is potential in re-crafting leisure practices themselves, alongside the re-crafting of direct mobility practices. This task may be approached through the learning between leisure practices, and by picking up on previous ridesharing procedures that may have been abandoned or forgotten. One feasible intervention based on the findings of this study is to promote the role of clubs and associations as mediators of social exchange and to develop simple ways of formalising these exchanges.

Chapter 6. Findings and concluding discussion

This thesis aimed to identify conditions, challenges and opportunities for a sustainable mobility transition by studying everyday mobility from the perspective of the carless. In three studies, I took on different theoretical and empirical perspectives in pursuit of this aim. In this final chapter, I present a number of central findings and discuss them in relation to previous research and the theoretical concepts central to the thesis. Finally, I discuss the contributions of the thesis, some practical implications and possible avenues for further research.

6.1 Main findings

6.1.1 Conditions that make carless life work

The first main finding from this thesis is an overall one: that everyday life beyond the private car works best when performing routinised, mandatory activities and when applying accessibility strategies based on proximity and coordination. This finding illustrates the basic time-geographic premises of an individual's opportunity space depending on the mode of transport (see Figure 2, p. 33). The prism of opportunity space shows the importance of opportunities nearby and the coordination of activities in the absence of fast and flexible mobility. As shown in Paper 2, the carless in Sweden generally make shorter trips than car owners do; their trips are also fewer and more chained. The extensive data used in paper 2 reveals little about the individuals included, and it is only possible to speculate as to what extent the mobility patterns presented in the paper represent active strategies or are enforced. However, for the voluntarily carless parents studied in Paper 1, using options that were available nearby was an explicit strategy for handling their relatively mobility-constrained daily

living, and they actively adapted their life spaces as much as possible to enable this strategy, including in their home, workplace, shopping and leisure activities. Another central strategy was planning to sequence activities within the same trip; as other studies have shown (Hasselqvist et al., 2016; Isberg et al., 2020), such coordination is aided by the bicycle, as an autonomous and flexible travel mode.

The project of material flow, which comprises activities that often involve the consumption of products, was found to be quite successfully managed with the use of carless accessibility strategies such as choosing opportunities within reach, e-shopping and coordination with other activities. A remaining challenge of material flow, which has also been noted in previous research (Hasselqvist et al., 2016; Isberg et al., 2020; Mattioli, Anable, & Vrostou, 2016), is how to get rid of large objects, which must be transported to specific recycling centres in car-dependent places.

Overall, I found that the mandatory projects of work and education are largely feasible for many carless in Sweden (Papers 1 and 2). The 'pegs' (Cullen & Godson, 1975) of everyday life – that is, home, work and/or school – act as types of spatial anchor points for these projects, around which everyday life is structured. Because these projects are mandatory and dominant (Åquist, 2002) they must function; thus, other projects are adjusted accordingly, at varying cost. Whereas the car can be a problem solver that allows car owners to ease the constraints around dominant projects, the carless rely on other strategies. Seeking and using flexible arrangements for work situations, through temporally flexible work, teleworking and working part time, were a corner stone in everyday life for the voluntarily carless parents in Paper 1. Support from social networks also eased the constraints of daily life without a car, such as in helping with children, offering a ride, lending a car, or even making a car trip in place of the carless. Flexible work arrangements and support from the social network thus facilitated proximity-oriented accessibility strategies.

The rather privileged situation of the voluntarily carless parents – namely, being able to actively choose a local life – enabled them to make use of the bicycle as their main mode of transportation. In comparison, the extensive data analysed in Paper 2 showed that the carless in (non-rural) Sweden made almost half their trips for work and school by means of public transportation. This result demonstrates the crucial role of public transportation in most carless lives and thus in the transition away from societal car dependence, despite the coupling constraints of adapting to timetables, stations and bus stops.

The second main finding is that carlessness is rarely a binary state; rather, it is a matter of degrees of access and degrees of need, both of which shift over time and in relation to the context and related constraints. I found that the car occasionally entered the everyday lives of the carless. These occasions illustrated the limits to non-car accessibility strategies and pointed to situations for which more efficient forms of car use will be needed in a transitioning mobility system. In line with previous findings in intervention studies and research on car-free housing developments (Baehler, 2019; Hasselqvist et al., 2016), the moments when car use occurred among the carless were related to activities requiring flexibility, coordination and cargo capacity, as well as activities that reached beyond densely built environments and the networks of public transportation. Car use also occurred when the social context placed expectations on mobility. The constraints of being carless were then managed by gaining access to car-based mobility through renting, car clubs, borrowing or getting a ride.

Being completely without car access differs from being able to borrow a car, get a ride from friends or relatives living nearby or hold a membership in a car club with easily accessible cars. This rather uncomplicated insight opens up the idea that, in the best of futures, we might be able to leave the notion of being carless or a car owner behind, because the most important condition for managing everyday mobility is not private car ownership but having *access* to a car, when *needed*.

6.1.2 Challenges in carless lives: mobility norms and 'escaping the cage of routines'

The third main finding is that the constraints of carlessness are the most pronounced when participating in non-routinised activities, particularly if these activities involve strong coupling constraints. This finding suggests that the non-routinised, spontaneous and occasional performance of leisure practices contributes to the car dependence previously observed with regards to leisure activities (Strömblad et al., 2022; Trafikanalys, 2022). It also confirms research that has observed high car dependence of occasional and spontaneous practices that are performed outside of urban areas (Van Eenoo & Boussaw, 2023).

Arranging flexible activities around pegs is aided by great deal of routinisation and coordination of activity sequences. Well-functioning routines are particularly important for everyday life beyond the private car. With the right conditions, routines can be liberating, by reducing the time pressure of everyday logistics and potentially freeing up time for more optional activities, such as leisure. However, these optional activities sometimes imply breaking out of the 'cage of routines' (Hägerstrand, 1984) that has been so neatly built to ensure efficiency and smoothness in the organisation of everyday life.

As with other projects, the leisure activities that are easiest to organise without a car are those that can be adjusted to pegs, by choosing nearby alternatives and weaving activities into the activity sequences of more dominant projects. This is likely to be easier if activities are carried out individually and thus entail a low degree of coupling constraints. Consequently, the extensive analysis presented in Paper 2 shows that the activities categorised as 'leisure' is associated with a low share of car use. However, the carless encounter more hardship when it comes to leisure activities occurring in non-regular places and at non-regular times, thus breaking with routines.

The fourth main finding is that strong norms in socialising that are related to the mobility expectations of car-based mobility are a key constraint for

the carless. Car norms are particularly tangible in relation to social practices that are bundled with car use through their temporal, spatial and material arrangements (Schatzki, 2010). As all three papers in this thesis show, social relations can be an important resource for the carless. That said, coordinating with others and relating to others' mobility is also a constraint. Challenges arise when socialising with car-owning acquaintances, friends and relatives, in relation to their more car-based lifestyles and the related expectations for speedy and flexible mobility. In the lingua of time geography, it can be said that these expectations often mean that activities are localised outside of the 'prism' or opportunity space of the carless (Hägerstrand, 1970; Lenntorp, 1976, see Figure 2, p. 33 in this volume) Thus, even individuals that voluntarily choose a carless lifestyle must sometimes comply with the social norms of automobility, such as by adjusting to the timing and spatial strategies of other people who are more car reliant. This may naturally be the case in leisure activities, and, as has also been found in previous research (Hasselqvist et al., 2016; Isberg et al., 2020), particularly in relation to children's leisure activities due to car-oriented norms of parenting.

To summarize, non-routinised activities requiring the coordination of people and things stand out as the most challenging occasions for the carless. The need to dispose of large objects, as mentioned above, is one such activity, which may require borrowing or renting a car. Above all, the constraints on the carless are tangible in relation to less routinised leisure activities, such as spontaneous outings, away matches in soccer or occasional orienteering competitions. These often highly social activities involve coupling constraints, as well as the presence of norms and expectations regarding mobility. In these optional, social and non-routinised activities, the promotion and uptake of shared forms of car use are key to transitioning mobility.

6.1.3 The opportunity of (re)bundling ridesharing with organised leisure practices

A fifth key finding from this thesis is that there is significant potential in approaching the *practices* of leisure to identify opportunities for reducing car use. As discussed earlier, non-routinised leisure activities performed in the company of others protrude as car-dependent and a challenge for the carless. Furthermore, leisure activities are important from a welfare perspective because they promote social inclusion, physical activity and general well-being – not least for children and youth. From a transition perspective, this finding highlights the need to make leisure activities that are currently car-dependent more inclusive, while also making them less carbon intensive. As indicated in the section above and noted in previous research (Vilhelmson, 2007; Holden & Linnerud, 2011), leisure activities are governed by a different logic than are work, school and the use of basic services, because they are highly optional and not as readily routinised. These features may render mobility related to leisure harder to affect with interventions targeting individuals and places (e.g. the provision of public transportation, infrastructures for walking and cycling) or with mobility management campaigns. An alternative is to target leisure *practices* instead – that is, to target the meanings, materiality and competences of how leisure is done and how it bundles with car use.

The findings of Paper 3 indicate that the studied leisure practices – as practices facilitated by car use (Kent, 2022) – are adjustable to some extent, reducing the need for car-based mobility without altering the practices altogether. Such adjustments may sometimes involve picking up on already existing or previously abandoned ways of performing practices. For instance, scouting practices can be performed in a materially more minimalistic manner, sprint orienteering in urban environments can be enhanced to increase accessibility by means of public transportation and children's soccer series can be planned in such a way as to reduce the travel needs for participants. However, there is a limit to how much car-dependent practices can change without disintegrating as practices altogether (Van Eenoo & Boussaw, 2023). The car use of the carless

indicated situations in which the car may remain necessary; for these situations, recrafting car use itself can be the way forward.

In the organised leisure practices specifically studied in this thesis (Paper 3), I found that bundling with car use mostly occurred in relation to performances with temporary, varying and dispersed material arrangements. The response of the carless to these car-dependent moments of leisure was to either refrain from certain performances or comply with mobility expectations by renting, borrowing or pooling cars, and through ridesharing. When car-based mobility is necessary for participation, sharing the ride holds the potential to be a socially inclusive and more efficient form of car use (Shaheen, 2018). However, many of the studied carless individuals were reluctant to ask for a ride, even when they knew that others were going by car to the same place at the same time. In different ways, they described feelings of being a burden, being in the hands of others or ending up in inconvenient situations. When frictions arose, the carless handled them by either avoiding ridesharing – and thereby sometimes also avoiding performing the leisure practice – or relying on established personal contacts. For the carless, ridesharing was often a necessary asset for participation, but one that was not without friction.

The sixth and final main finding from this thesis is that ridesharing is a social practice with radically different meanings from private car use; thus, it bundles differently with car-dependent practices. I found that the *sharing* in 'ridesharing' contradicts the strong meaning of individuality that is associated with car use in the literature (see e.g. Nitschke, 2020) and has shaped how leisure practices are performed. In other words, the social norms of private car use – individuality, independence, and temporal and spatial flexibility (Shove, 2002; Urry, 2004) – shape how leisure practices are performed, and ridesharing does not fit quite as well with these norms. For parents, going against car norms can be even harder, as parenting is yet another practice which meanings – such as safety, comfort and privacy – are strongly shaped by automobility (Paijmans & Pojani, 2021; Selzer & Lanzendorf, 2022). Ridesharing can be facilitated if it is part of a

formalised exchange (Lovejoy & Handy, 2011; Grahn, 1997) in which the carless can contribute by other means. In this way, ride-giving can be equated with other services that members do for their clubs. In an addition to the literature, I also found that ridesharing works better when the trip itself is incorporated into the performance of the leisure practice, making the trip a common concern and private mobility not as important. This approach relates to elements of community and social inclusion in the leisure practices.

6.2 Contributions and transferability

This thesis offers a wide perspective on the role of mobility and car use in everyday life. It demonstrates the value of studying the preconditions for mobility as individually situated and in relation to the practices that are shaped by – and shape – mobility. An important merit of this dual perspective on mobility is the ability to conceptualise opportunities for change on a societal level, through the situations and undertakings of individuals. Focusing on practices in the transition towards sustainable mobility avoids putting the full burden of responsibility on the individual, yet does not view her as being bereft of agency and thereby of responsibility. In this way, the sustainability transition may be viewed as a common concern, rather than as a concern of the state *or* the individual.

By focusing on carless accessibility strategies, mobility patterns and practice performances, this thesis illustrates what it means to manage without a private car in a society that has been largely organised around the car. Previous research on carlessness has shown that its occurrences and conditions are uneven (Lovejoy, 2012; Mattioli, 2014; Brown, 2017; Mitra & Saphores, 2017; Van Eenoo, 2023), which can have severe social consequences in relation to car dependence (Mattioli & Colleoni, 2015). This thesis contributes to the field with a perspective on how everyday life without a car can be made to work, what it takes and what the limits are. By investigating mobility in relation to certain activities and practices, rather than to characteristics of the transport system or individual

behaviours, this thesis also contributes knowledge of the opportunities for a mobility transition.

Some of the findings of this thesis – such as the specific accessibility strategies identified – are highly contextual, having been derived from certain geographies and from individuals with certain resources and preconditions. Yet, these findings may be transferrable to other, similar contexts to some extent, and they bring up important questions for further research. Other findings are more directly transferrable to different social and geographic contexts with similar patterns of car dependence as the Swedish, semi-urban and urban contexts in which this research is made. For example, the studies in this thesis showed that *social norms and social relations* have significant importance for car use and can mean both constraints and opportunities. This finding emphasises the insufficiency of densification and infrastructure provision alone for a thorough mobility transition, which may well be relevant in other semi-urban and urban contexts. Moreover, regarding the high car use of leisure activities, which is under researched and is an area where policy interventions fall short, the findings of this thesis demonstrate that *non-routinised*, *occasional* and *spontaneous* leisure activities are important drivers of car use – particularly because they are often social. Practice-oriented approaches could be key in understanding car use for these activities. Finally, this thesis shows the *importance of social solutions in facilitating shared car use*, particularly when it comes to non-routinised leisure activities. Digital tools are important; ultimately, however, ridesharing is a social phenomenon that requires social arrangements to ensure safety, convenience and social exchange for the trip to be shared. Developing such solutions can contribute to untying car use from private ownership and moving towards everyday life beyond the private car.

6.3 Ways forward

6.3.1 New opportunities for sustainable mobility: approaching leisure travel

The subject of this thesis was motivated by large-scale societal problems and the need for a major change: that is, a thorough mobility transition towards reduced car use. Therefore, in conclusion, I present some reflections on how the findings of this thesis may be translated into practical implications for such a transition. Here, I emphasise non-routinised leisure activities, which were identified in the thesis as a major challenge for the carless and as an aspect in need of further development regarding sustainable mobility.

One of my overarching reflections relates to the possibility of a more extensive adoption of an activity- and practice-oriented perspective on mobility in policy and planning, including a more thorough consideration of how and why people move about. With traffic-reduction targets rising on the policy agenda of several cities and countries[1], the densification of urban areas and investments in infrastructure for non-car travel modes are unlikely to be sufficient. In such a situation, it is necessary to widen the perspective to include the situations for which cars are used. Importantly, such an approach may require the involvement of stakeholders that are not traditionally occupied with matters of transportation and mobility. A practice-oriented approach could inform integrated land-use planning and cross-sector cooperation in municipal organisations, in which sectors for the planning of land use and transportation could collaborate with the sectors maintaining and using sports facilities and green spaces, for example.

[1] Although Sweden as a country does not have such a target, many Swedish municipalities with cities do (Hrelja, 2018). Some European countries and regions that has adopted various forms of reduction- or zero growth targets for car use are Austria (OECD, 2022a), Ireland (OECDb, 2022), Norway (Tennøy & Hagen, 2020), Scotland (Scottish Government, 2020) and Wales (Party of Wales, 2023).

Trips made for non-routinised activities – particularly leisure activities – may be harder to approach with policy and planning interventions because they are often differentiated temporally, spatially and as practices. Still, such activities currently give rise to a large proportion of car use. Because these trips are important from a welfare perspective, not least for children and youth, it is important to maintain them in a mobility system under pressure and in need of a sustainability transition. By paying attention to specific leisure practices, it is possible to understand the driving forces of related car use and how practices can intentionally be recrafted (Spurling et al., 2013) to reduce or change car use. Interventions may be aimed at the material elements of practices and how practices are organised temporally and spatially; they can also be aimed at the social norms directly related to the meanings and competences of practices. Because some moments of leisure practices cannot be performed without cars, enabling tailored, affordable mobility services and greatly increase ridesharing is central in ensuring inclusive accessibility to these activities. The role of multiple stakeholders in this task should not be underestimated.

The thesis findings indicate that strategies can be applied by clubs for organised leisure, in order to promote a sense of community and social inclusion and thus to facilitate ridesharing. One strategy is to normalise ridesharing by establishing fixed pickup locations and letting the activity start there. Including ridesharing in a formalised exchange may allow ride-giving to be equated with other services that members do for their clubs, such as baking, maintaining club venues, coaching or taking care of the finances. Alternatively, clubs could introduce a standard sum for economic compensation for those offering a ride. These potential solutions illustrate that making ridesharing an attractive alternative to private car use requires social innovation, even if digital tools can facilitate actual coordination.

6.3.2 Suggestions for further research

The thesis' findings raise some questions and point to possible avenues for further research. First, there is potential for further study on carless

situations and accessibility strategies in order to understand the conditions for an inclusive mobility transition. The residential environment naturally has a great influence on the feasibility of carless accessibility, as well as the need for and function of new mobility solutions. Thus, it would be fruitful to qualitatively and quantitatively study carless mobility and immobility in a variation of geographical contexts, distinguishing between larger cities, smaller towns and sparser geographies. Such research could contribute to the development of mobility solutions tailored to usefulness in different geographical contexts.

Further contributions could also be made by studying the carless performances of specific practices, particularly those relating to leisure and consumption. How can specific leisure practices be adjusted to reduce car dependence and increase shared car use in the car-dependent moments of the practices? Leisure is a very complex and varied sphere of everyday life, yet it is often investigated as a single trip purpose. Moreover, the carless management of the material flow project implies a potential to reduce car use. To what extent can the residential environment explain the differences in car use for the material flow project compared with other projects? What is the role of e-commerce? Another question for further inquiry regards how the carless define and perform consumption practices and the potential seeds their performances may hold for recrafting consumption.

Finally, longitudinal research of voluntarily carless individuals and households is very scarce (but see Sattlegger & Rau, 2016 and Kent, 2024, for a reconstructive approach). Qualitative inquiry into possible negotiations in the household, changing residential needs and preferences, changing working situations and unforeseen life events could make an important contribution regarding the conditions for choosing to remain carless in the long term.

Sammanfattning (summary in Swedish)

Den här avhandlingen, med den svenska titeln *Bortom den privata bilen – Den hållbara rörlighetens vardagliga villkor*, undersöker rörlighetens roll i vardagen för att förstå förutsättningarna för en hållbar mobilitetsomställning som innebär minskat bilanvändande. Den snabba, flexibla och individuella rörlighet som den privata bilen erbjuder har stort inflytande över vardagslivets organisation. En utgångspunkt för avhandlingen är därför att lösningar för omställning inte bara står att finna inom samhällsplanering och fordonselektrifiering, utan också i förhållande till de aktiviteter och praktiker som rörligheten möjliggör.

Avhandlingens syfte är att identifiera förutsättningar, utmaningar och möjligheter för mobilitetsomställning. Det görs genom att undersöka hur de billösa, det vill säga personer tillhörande hushåll som inte äger bil, organiserar sin vardag mitt i det bilberoende samhället. Särskild uppmärksamhet ägnas åt hur billösa individer och familjer hanterar rörlighet i förhållande till de rumsligt spridda aktiviteter som utgör vardagslivet. Avhandlingen består av tre efterföljande studier med teoretisk tillämpning av tidsgeografi (studie 1 och 2) och praktikteori (studie 3), vars resultat publicerats i de tre forskningsartiklar som ingår i avhandlingen. Genom den tidsgeografiska ansatsen undersöks individernas situerade villkor för att utföra de aktiviteter som äger rum på olika platser och som ingår i vardagslivets olika projekt. Rörlighet ses här som en av flera tillgänglighetsstrategier som individer tillämpar för att hantera restriktioner och nå aktivitetsmöjligheter. Genom praktikteorin studeras i stället de sociala praktiker som människors aktiviteter ingår i. Det innebär ett skifte av empiriskt fokus från individen till de betydelser, kompetenser och materiella villkor som utgör specifika sociala praktiker.

I avhandlingens första studie undersöks forskningsfrågan *Hur hanteras vardagen, och vilka tillgänglighetsstrategier tillämpas, av frivilligt billösa barnfamiljer?* Studien baseras på intervjuer med åtta föräldrar från åtta familjer i

Göteborg som valt att inte äga bil. Dessa föräldrar exemplifierar den frivilliga billöshetens fördelar, ansträngningar och svårigheter i en livssituation som ofta associeras med stort bilanvändande. Resultaten visar att föräldrarnas tillgänglighetsstrategier är i hög grad närhetsbaserade och fungerar som bäst i förhållande till rutinmässiga aktiviteter som arbete, skola och konsumtion. Flexibla arbetsförhållanden och e-handel med hemleverans är till stor hjälp för familjerna. Billösheten är mer hindrande när det gäller fritidsaktiviteter och sociala aktiviteter. Även för dessa aktiviteter prioriterar föräldrarna närhet så långt det är möjligt, men när det är nödvändigt anpassar de sig till rörlighetsförväntningar genom att hyra eller låna bil, använda bilpool, eller på olika sätt förlita sig på andras bilanvändande. På så sätt spelar bilen en roll även i de billösas liv. Slutligen, även om föräldrarna gör vissa uppoffringar för att leva utan egen bil, så har de förutsättningar att få det att fungera – ett socialt nätverk, ekonomiska förutsättningar att välja bostad med närhet till service och flexibla arbetstider. Det föranleder en extensiv ansats i avhandlingens andra studie, för att förstå rörlighet och bilanvändande hos ett större och mer varierat utsnitt ur den svenska befolkningen.

Den andra studien undersöker rörlighetsmönster hos billösa – i jämförelse med bilägare – i det urbana och semi-urbana Sverige. I en statistisk analys av den svenska resvaneundersökningen (RVU 2011–2016) undersöks forskningsfrågan *Vilka är de generella rörlighetsmönstren hos billösa svenskar i förhållande till olika vardagslivskontexter, och vilken roll spelar bilen?* Rörlighet och bilanvändande undersöks först i förhållande till centrala vardagsprojekt (arbete/skola, materialflöde/konsumtion, sociala relationer och fritidsaktiviteter) och sedan hos grupper i olika livssituationer (unga vuxna, föräldrar och pensionärer). Studien visar på sammanhang där de billösas rörlighet skiljer sig från bilägarnas, och hur detta formas av restriktioner kopplade till både vardagsprojekt och livssituationer. Resultaten visar att restriktioner kopplade till vardagsprojekt och livssituation bidrar till att forma billösas rörlighet. Även här framstår de mer rutinmässiga resorna, arbete/skola och materialflöde/konsumtion, som mindre begränsade än resor kopplade till sociala relationer. Fritidsaktiviteter, semester borträknat, görs intressant nog mer sällan med bil av både bilägare och

billösa. Det tyder på att det är enstaka, längre fritidsresor och sociala resor som ger upphov till det stora bilanvändandet på fritiden, och som visat sig vara en svårighet för de frivilligt billösa föräldrarna i avhandlingens första studie. Detta motiverar ett fokus på fritidens praktiker i den tredje studien.

I den tredje studien undersöks organiserade fritidspraktiker som delvis är bilberoende. Genom intervjuer med 25 vuxna, billösa utövare, föräldrar, ledare och tränare inom scouting, barn- och ungdomsfotboll, och orientering, studeras forskningsfrågan *Hur kan samåkning underlättas i organiserade fritidspraktiker för att minska beroendet av privat bilanvändning?* Genom praktikperspektivet förstås bilberoende som en egenskap hos praktikerna, snarare än hos individer eller specifika platser. Rörlighet och bilanvändande ses som sammanbundet med fritidspraktikerna genom deras arrangemang i tid och rum och de element av betydelser, kompetenser och material som praktikerna består av. En utgångspunkt för studien är att en del praktiker är så tätt sammanbundna med bilen att de blir svåra att upprätthålla helt utan bilanvändning. Då är samåkning ett sätt att minska det faktiska bilanvändandet. Resultaten visar att bilanvändande förknippas med fritidspraktikernas tillfälliga, varierande, och rumsligt spridda arrangemang. Samåkning är en viktig resurs för de billösas utövande, och förekommer i varierande omfattning inom alla tre studerade praktiker – ofta samordnat via digitala kanaler. Viktiga skillnader mellan praktikerna har att göra med huruvida samåkningen organiseras gemensamt, eller på initiativ av den som behöver skjuts. Ett individualiserat ansvar för samåkning kan utgöra ett hinder för de billösas deltagande. Studiens resultat tyder på att om resan inkluderas i själva praktikutövandet, och därför ses som en gemensam angelägenhet inom föreningen där skjutsande är utbytbart med andra tjänster, underlättas samåkning betydligt.

Avhandlingens fokus på billösas tillgänglighetsstrategier, rörlighetsmönster och fritidspraktiker illustrerar vad det kan innebära att leva utan egen bil i ett bilorienterat samhälle. Sammantaget visar resultaten att med rätt förutsättningar – genom samordning av aktiviteter, stöd från sociala relationer, prioritering av det som finns nära, och nyttjande av digitala

lösningar för att skapa flexibilitet – kan stora delar av vardagen fungera utan privat bil. Men det finns också utmaningar som dels har att göra med de mindre rutinmässiga delarna av vardagen, dels med de sociala normer och mobilitetsförväntningar som bilsamhället är förknippat med. Det är framför allt de tillfälliga, spontana och sociala delarna av fritiden som ger upphov till mycket bilanvändande och är en utmaning för de billösa. Här har samåkning en viktig roll att spela för att möjliggöra en mobilitetsomställning mot mindre biltrafik som också är socialt inkluderande. Avhandlingen visar att billöshet knappast är ett binärt tillstånd utan en fråga om grader av tillgång – bortom ägande – och grader av behov, som skiftar över tid och situation. Bilen spelar en roll även i de billösas liv, och dessa tillfällen kan ses som gränser för de bilfria tillgänglighetsstrategiernas tillräcklighet. De exemplifierar tillfällen då ett mer effektivt bilanvändande är nödvändigt i ett transportsystem i omställning.

References

Aall, C., Grimstad Klepp, I., Brudvik Engeset, A., Skuland, S., & Stöa, E. (2011). Leisure and sustainable development in Norway: Part of the solution and the problem. *Leisure Studies, 30*(4), 453-476. https://doi.org/10.1080/02614367.2011.589863

Axhausen, K., Gärling, T., 1992. Activity-based approaches to travel analysis: conceptual frameworks, model, and research problems. *Transport Reviews, 12*, 323–234.

Bachmann, F., Hanimann, A., Artho, J., & Jonas, K. (2018). What drives people to carpool? Explaining carpooling intention from the perspectives of carpooling passengers and drivers. *Transportation Research Part F, 59*, 260-268. http://dx.doi.org/10.1016/j.trf.2018.08.022

Baehler, D. (2019). *Living in a car-free housing environment. Motivations and mobility practices of residents in nine developments in Switzerland and Germany*. Doctoral thesis. Lausanne, Switzerland: University of Lausanne.

Baehler, D., & Rérat, P. (2020a). Between ecological convictions and practical considerations – Profiles and motivations of residents in car-free housing developments in Germany and Switzerland. *Geographica Helvetica*, *75*(2), 169-181. http://dx.doi.org/10.5194/gh-75-169-2020

Baehler, D., & Rérat, P. (2020b). Beyond the car. Car-free housing as a laboratory to overcome the 'system of automobility'. *Applied Mobilities*, 7(3), 280-297. https://doi.org/10.1080/23800127.2020.1860513

Bamberg, S. and Schmidt, P. (1998). Changing travel mode choice as rational choice: results from a longitudinal intervention study. *Rationality and Society. 10(2).* 223-252. https://doi.org/10.1177/104346398010002005

Baumgartner, A., Schubert, I., Sohre, A., Tomic, U., Moser, C., & Burger, P. (2022). Toward a reduction of car-based leisure travel: An analysis of determinants and potential measures. *International Journal of Sustainable Transportation*. http://dx.doi.org/10.1080/15568318.2022.2121234

Berg, J., Levin, L., Abramsson, M., & Hagberg, J.-E. (2014). Mobility in the transition to retirement: The intertwining of transportation and everyday projects. *Journal of Transport Geography*, *38*, 48-54. http://dx.doi.org/10.1016/j.jtrangeo.2014.05.014

Bourdieu, P. (1977). *Outline of a theory of practice.* Cambridge: Cambridge University Press.

Brown, A. (2017). Car-less or car-free? Socioeconomic and mobility differences among zero-car households. *Transport Policy*, *60*, 152-159. http://dx.doi.org/10.1016/j.tranpol.2017.09.016

Bulteau, J., Feuillet, T., & Dantan, S. (2019). Carpooling and carsharing for commuting in the Paris region: A comprehensive exploration of the individual and contextual correlates of their uses. *Travel Behaviour and Society, 16*, 77-87. http://dx.doi.org/10.1016/j.tbs.2019.04.007

Catungal, J. P., & Dowling, R. (2021). Power, subjectivity, and ethics in qualitative research. In I. Hay, & M. Cope (Eds.), *Qualitative Research Methods in Human Geography* (pp. 18-39). Ontario, Canada: Oxford University Press.

Clark, B., Lyons, G., & Chatterjee, K. (2016). Understanding the process that gives rise to car ownership level changes. *Journal of Transport Geography*, *55*, 110-120. http://dx.doi.org/10.1016/j.jtrangeo.2016.07.009

Crang, M. (2003). Telling materials. In M. Pryke, G. Rose, & S. Whatmore (Eds.), *Using social theory.* London: SAGE Publications Ltd.

Creswell, J. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). London: SAGE Publications Ltd.

Cullen, I., & Godson, V. (1975). Urban networks: The structure of activity patterns. *Progress in Planning*, *4*, 1-96. http://dx.doi.org/10.1016/0305-9006(75)90006-9

Dargay, J., Hivert, L., & Legros, D. (2008). The dynamics of car availability in EU countries: A comparison based on the European Household Panel Survey. *IATSS Research*, *32*(2), 44-55. http://dx.doi.org/10.1016/S0386-1112(14)60208-9

Dargay, J., Gately, D., & Sommer, J. (2007). Vehicle ownership and income growth, worldwide 1960–2030. *Energy*, *28*, 1-7. http://dx.doi.org/10.5547/ISSN0195-6574-EJ-Vol28-No4-7

Dargay, J., Hanly, M., Madre, J.-L., Hivert, L., & Chlond, B. (2003). Demotorisation seen through panel surveys: A comparison of France, Britain and Germany. *10th International Conference of Travel Behaviour Research.* August 10-15. Lucerne, Switzerland.

Dennis, K., & Urry, J. (2009). *After the car.* Cambridge, UK: Polity.

Dubernet, T., & Axhausen, K. (2015). Implementing a household joint activity-travel multi-agent simulation tool: First results. *Transportation*, *42*(5), 753-769. http://dx.doi.org/10.1007/s11116-015-9645-7

Elldér, E. (2019). Who is eligible for telework? Exploring the fast-growing acceptance of and ability to telework in Sweden, 2005–2006 to 2011–2014. *Social Science, 8*(7). http://dx.doi.org/10.3390/SOCSCI8070200

Elldér, E., Vilhelmson, B., & Thulin, E. (2023). Is a car necessary for active aging? Relationships between aging, car use, and time spent on activities that sustain health and well-being. *Transportation Research Interdisciplinary Perspectives*, *22*. http://dx.doi.org/10.1016/j.trip.2023.100920

Ellegård, K. (2019). *Thinking time geography*. Abingdon, UK: Routledge.

Ellegård, K., & Svedin, U. (2012). Torstens Hägerstrand's time-geography as the cradle of the activity-based approach in transport geography. *Journal of Transport Geography*, *23*, 17-25. http://dx.doi.org/10.1016/j.jtrangeo.2012.03.023

Elwood, S. (2010). Mixed methods: Thinking, doing, and asking in multiple ways. In D. DeLyser, S. Herbert, S. Aitken, M. Crang, & L. McDowell (Eds.), *The SAGE handbook of qualitative geography* (pp. 94-114). Los Angeles; London: SAGE Publications, Inc. https://doi.org/10.4135/9780857021090

Eurostat, 2023. *Population density*. Eurostat Data Browser. https://ec.europa.eu/eurostat/databrowser/view/tps00003/default/table?lang=en

Fox, M. (1995). Transport planning and the human activity approach. *Journal of Transport Geography*, *3*(2), 105-116. https://doi.org/10.1016/0966-6923(95)00003-L

Frei, A., Axhausen, K., & Ohnmacht, T. (2009). Mobilities and social network geography: Size and spatial dispersion – The Zürich case study. In H. Maksim, M. Bergman, T. Ohnmacht, & M. Grieco (Eds.), *Mobilities and inequality* (pp. 99-122). Abingdon, UK: Taylor and Francis Group.

Freudendal-Pedersen, M. (2009). *Mobility in daily life: Between freedom and unfreedom*. Surrey, UK: Ashgate.

Frändberg, L., & Vilhelmson, B. (2011). More or less travel: Personal mobility trends in the Swedish population focusing on gender and cohort. *Journal of Transport Geography*, *19*(6), 1235-1244. https://doi.org/10.1016/j.jtrangeo.2011.06.004

Frändberg, L., & Vilhelmson, B. (2014). Spatial, generational and gendered trends and trend-breaks in mobility. In T. Gärling, D. Ettema, & M. Friman (Eds.), *Handbook of sustainable travel* (pp. 15-32). Dordrecht, Netherlands: Springer.

Frändberg, L., Thulin, E., & Vilhelmson, B. (2005). *Rörlighetens omvandling. Om resor och virtuell kommunikation – Mönster, drivkrafter, gränser* [The transformation of mobility. On travel and virtual communication - Patterns, drivers, limits]. Lund, Sweden: Studentlitteratur.

Geels, F. W. (2012). A socio-technical analysis of low-carbon transitions: introducing the multi-level perspective into transport studies. *Journal of Transport Geography*, 24, 471-482. https://doi-org.ezproxy.ub.gu.se/10.1016/j.jtrangeo.2012.01.021

Gheorghiu, A., & Delhomme, P. (2018). For which types of trips do French drivers carpool? Motivations underlying carpooling for different types of trips. *Transportation Research Part A, Policy and Practice*, *113*, 460-475. https://doi.org/10.1016/j.tra.2018.05.002

Gil Solá, A. (2013). *På väg mot jämställda arbetsresor? Vardagens mobilitet i förändring och förhandling* [Towards gender equality? Women's and men's commuting under transformation and negotiation]. Doctoral thesis. Gothenburg, Sweden: University of Gothenburg.

Gil Solá, A. (2016). Constructing work travel inequalities: The role of household gender contracts. *Journal of Transport Geography*, *53*, 32-40. https://doi.org/10.1016/j.jtrangeo.2016.04.007

Gil Solá, A., & Levin, L. (2021). Vardagskartor: Kunskapsunderlag med tidsgeografiskt angreppssätt [Everyday maps: knowledge base with a time-geography approach]. In L. Levin, & A. Gil Solá (Eds.), *Socialt hållbar transportplanering. Inspirationshandbok med exempel från forskning och praktik* [Socially sustainable transport planning. Inspirational guide with examples from research and practice] (pp. 107-134). VTI, University of Gothenburg, and K2 Nationellt kunskapscentrum för kollektivtrafik.

Grahn, W. (1997). Liv utan bil. In B. Bursell, & A. Rosengren (Eds.), *Drömmen om bilen* [The dream of the car] (pp. 242-255). Stockholm: Nordiska museet.

Gray, L., Wong-Wylie, G., Rempel, G., & Cook, K. (2020). Expanding qualitative research interviewing strategies: Zoom video

communications. *The Qualitative Report*, *25*(5), 1292-1301. http://dx.doi.org/10.46743/2160-3715/2020.4212

Hasselqvist, H., Hesselgren, M., & Bogdan, C. (2016). Challenging the car norm: Opportunities for ICT to support sustainable transportation practices. *#chi4good, May 07-12*, (pp. 1300-1311). San Jose, USA. http://dx.doi.org/10.1145/2858036.2858468

Haugen, K. (2012). *The accessibility paradox: everyday geographies of proximity, distance and mobility*. Doctoral thesis. Umeå, Sweden: Umeå University.

Hjorthol, R., & Fyhri, A. (2009). Do organized leisure activities for children encourage car use? *Transportation Research Part A*, *43*, 209-218. http://dx.doi.org/10.1016/j.tra.2008.11.005

Hjorthol, R., Levin, L., & Sirén, A. (2010). Mobility in different generations of older persons: The development of daily travel in different cohorts in Denmark, Norway and Sweden. *Journal of Transport Geography*, *18*, 624-633. http://dx.doi.org/10.1016/j.jtrangeo.2010.03.011

Holden, E., & Linnerud, K. (2011). Troublesome leisure travel: The contradiction of three sustainable transport policies. *Urban Studies (Edinburgh, Scotland)*, *48*, 3087-3106. http://dx.doi.org/10.1177/0042098010396234

Hrelja, R. (2018). *Mål och åtgärder för minskad biltrafik i svenska kommuner* [Targets and measures to reduce car traffic in Swedish municipalities]. Lund: K2 Outreach. https://www.k2centrum.se/sites/default/files/fields/field_uppladdad_rapport/mal_och_atgarder_for_minskad_biltrafik_i_svenska_kommuner_outreach_2018_3.pdf

Hui, A. (18 February 2016). *Configuring what comes next: Sampling*. Practice Theory Methodologies. https://practicetheorymethodologies.wordpress.com/2016/02/18/allison-hui-configuring-what-comes-next-sampling/

Hui, A., Schatzki, T., & Shove, E. (2017). Introduction. In A. Hui, T. Schatzki, & E. Shove (Eds.), *The nexus of practices: Connections, constellations, practitioners* (pp. 1-8). Abingdon, UK: Routledge.

Hägerstrand, T. (1970). What about people in regional science? In G. Carlestam, & B. Sollbe (Eds.), *Om tingens vidd och tidens ordning* [On the width of things and the order of time] (1991). Stockholm: Swedish Council for Building Research.

Hägerstrand, T. (1984). Escapes from the cage of routines: Observations of human paths, projects, and personal scripts. In J. Long, & R. Hecock (Eds.), *Leisure, tourism and social change* (pp. 7-19). Dunfermline, UK: Dunfermline College of Physical Education.

Hägerstrand, T. (1985). Time-geography: Focus on the corporeality of man, society, and environment. *The Science and Praxis of Complexity*, 193-216.

Hägerstrand, T. (2009). *Tillvarovären* [The weave of existence]. Stockholm: Formas Research Council.

Isberg, S., Bengtsson, M., & Ståhl, H. (2020). *Tre månader utan bil* [Three months without a car]. Umeå, Sweden: Umeå kommun. https://umea.se/bilfri

Jarvis, H. (1999). The tangled webs we weave: Household strategies to co-ordinate home and work. *Work, Employment & Society*, *13*(2), 225-247. http://dx.doi.org/10.1177/09500179922117926

Jensen, O., Sheller, M, & Wind, S. (2015). Together and apart: Affective ambiences and negotiation in families everyday life mobility. *Mobilities*, *3*, 363-382. http://dx.doi.org/10.1080/17450101.2013.868158

Jones, P. M. 1992. Some recent methodological developments in our understandning of travel behaviour. IATTS Research, 16(2), 18-29.

Kent, J. L. (2022). The use of practice theory in transport research. *Transport Reviews*, *42*(2), 222-244. https://doi.org/10.1080/01441647.2021.1961918

Kent, J. L. (2024). The car-free journey to, and through, parenthood. *Transportation.* https://doi.org/10.1007/s11116-024-10466-9

Klein, N., & Smart, M. (2017). Car today, gone tomorrow: The ephemeral car in low-income, immigrant and minority families. *Transportation*, *55*, 495-510. http://dx.doi.org/10.1007/s11116-015-9664-4

Klein, N., Basu, R., & Smart, M. (2023). Transitions into and out of car ownership among low-income households in the United States. *Journal of Planning Education and Research*, 1-14. http://dx.doi.org/10.1177/0739456X231163755

Kühne, K., Mitra, S., & Saphores, J.-D. (2018). Without a ride in car country – A comparison of carless households in Germany and California. *Transportation Research Part A*, *109*, 24-40. http://dx.doi.org/10.1016/j.tra.2018.01.021

Lenntorp, B. (1976). *Paths in epace-time environments. A time-geographic study of movement possibilities of individuals.* Dissertation LXXVII. Lund, Sweden: Lund University Department of Geography.

Lovejoy, K. (2012). *Mobility fulfillment among low-car households: Implications for reducing auto dependence in the United States.* Doctoral thesis. Davis, California: University of California.

Lovejoy, K., & Handy, S. (2011). Social networks as a source of private-vehicle transportation: The practice of getting rides and borrowing vehicles among Mexican immigrants in California. *Transportation Research Part A*, *45*, 248-257. http://dx.doi.org/10.1016/j.tra.2011.01.007

Lundin, P. (2008). *Bilsamhället: Ideologi, expertis och regelskapande i efterkrigstidens Sverige. Avhandling* [The car society: Ideology,

expertise and rule-making in post-war Sweden. Doctoral dissertation]. (2nd ed.). Stockholm: Stockholmia förlag.

Marsden, G., Anable, G., Chatterton, T., Docherty, I., Faulconbridge, J., Murray, L., Roby, H., & Shires, J. (2020). Studying disruptive events: Innovations in behaviour, opportunities for lower carbon transport policy? *Transport Policy*, 89-101. https://doi.org/10.1016/j.tranpol.2020.04.008

Mattioli, G. (2014). Where sustainable transport and social exclusion meet: Households without cars and car dependence in Great Britain. *Journal of Environmental Policy and Planning*, *16*, 379-400. https://doi.org/10.1080/1523908X.2013.858592

Mattioli, G., Anable, J., & Vrostou, K. (2016). Car dependent practices: Findings from a sequence pattern mining study of UK time use data. *Transportation Research Part A*, *89*, 56-72. https://doi.org/10.1016/j.tra.2016.04.010

Mattioli, G., & Colleoni, M. (2015). Transport disadvantage, car dependence and urban form. In Pucci, P., & Colleoni, M. (Eds.). *Understanding mobilities for designing contemporary cities* (pp. 171-190). Heidelberg, Germany: Springer Cham. https://doi.org/10.1007/978-3-319-22578-4_10

Mclaren, A. (2016). Families and transportation: Moving towards multimodality and altermobility? *Journal of Transport Geography*, *51*, 218-225. https://doi.org/10.1016/j.jtrangeo.2016.01.006

Mitra, S., & Saphores, J.-D. (2017). Carless in California: Green choice or misery? *Journal of Transport Geography*, *65*, 1-12. https://doi.org/10.1016/j.jtrangeo.2017.09.016

Mitra, S., & Saphores, J.-D. (2019). How do they get by without cars? An analysis of travel characteristics by carless households in California. *Transportation*, *47*, 2837-2858. https://doi.org/10.1007/s11116-019-09994-6

Moreno, C., Allam, Z., Chabaud, D., Gall, C., & Pratlong, F. (2021). Introducing the '15-minute city': Sustainability, resilience and place identity in future post-pandemic cities. *Smart Cities*, *4*(1), 93-111. https://doi.org/10.3390/smartcities4010006

Morris, E., Blumenberg, E., & Guerra, E. (2020). Does lacking a car put the brakes on activity participation? Private vehicle access and access to opportunities among low-income adults. *Transportation Research Part A: Policy and Practice*, *136*. https://doi.org/10.1016/j.tra.2020.03.021

Müggenberg, H., Busch-Geertsema, A., & Lanzendorf, M. (2015). Mobility biographies: A review of achievements and challenges of the mobility biographies approach and a framework for future research. *Journal of Transport Geography*, *46*, 151-163. https://doi.org/10.1016/j.jtrangeo.2015.06.004

Naturvårdsverket. (2022). *Hur kan transporternas miljöpåverkan minska?* [How can the environmental impact from transports be reduced?]. https://www.naturvardsverket.se/amnesomraden/klimatomstallningen/omraden/klimatet-och-transporterna/hur-kan-transporternas-miljopaverkan-minska/

Naturvårdsverket. (2023). *Inrikes transporter, utsläpp av växthusgaser* [Domestic transport, greenhouse gas emissions]. https://www.naturvardsverket.se/data-och-statistik/klimat/vaxthusgaser-utslapp-fran-inrikes-transporter/

Neutens, T., Schwanen, T., & Witlox, F. (2010). The prism of everyday life: Towards a new research agenda for time geography. *Transport Reviews*, *31*(1), 25-47. https://doi.org/10.1080/01441647.2010.484153

Nitschke, L. (2020). Reconstituting automobility: the influence of non-commercial carsharing on the meanings of automobility and the car. *Sustainability,* 12(17). https://doi.org/10.3390/su12177062

Oakil, A. (2016). Securing or sacrificing access to a car: Gender difference in the effects of life events. *Travel Behaviour and Society*, *3*, 1-7. http://dx.doi.org/10.1016/j.tbs.2015.03.004

Oakil, A., Ettema, D., Arentze, T., & Timmermans, H. (2014). Changing household car ownership level and life cycle events: An action in anticipation or an action on occurrence. *Transportation*, *41*, 889-904. http://dx.doi.org/10.1007/s11116-013-9507-0

OECD. (2022). *Austrias 'KlimaTicket' to promote low-carbon mobility*. https://www.oecd.org/climate-action/ipac/practices/austria-s-klimaticket-to-promote-low-carbon-mobility-408c8de9/

OECD. (2022b). *Redesigning Ireland's Transport for Net Zero: Towards Systems that Work for People and the Planet*. Paris: OECD Publishing. https://doi.org/10.1787/b798a4c1-en.

Oxford English Dictionary. (2024). *Transition*. https://www.oed.com/search/dictionary/?scope=Entries&q=transition

Paijmans, H., & Pojani, D. (2021). Living car-free by choice in a sprawling city: Desirable and … possible? *Case Studies on Transport Policy*, *9*, 823-829. https://doi.org/10.1016/j.cstp.2021.04.001

Payyanadan, R. P., & Lee, J. D. (2018). Understanding ridesharing needs of older adults. *Travel Behaviour and Society*, *13*, 155-164. https://doi.org/10.1016/j.tbs.2018.08.002

Pigalle, E., & Aguiléra, A. (2023). Ridesharing in all its forms – Comparing the characteristics of three ridesharing practices in France. *Journal of Urban Mobility*, *3*. https://doi.org/10.1016/j.urbmob.2023.100045

Prillwitz, J., Harms, S., & Lanzendorf, M. (2006). Impact of life-course events on car ownership. *Transportation Research Record, 1985*, 71-77.

Party of Wales. (2023). *Reducing car journeys by half by 2030.* https://www.partyof.wales/teithiau_car_car_journeys

Pädam, S., Andersson, M., Brundell-Freij, K., Hallström, A., Johansson, E., Moback, D., Nelander, L. Viklund, V. (2022). *Styrmedel för ett transporteffektivt samhälle [Policy instruments for a transport-efficient society]*. Stockholm: WSP Advisory. https://www.trafa.se/globalassets/rapporter/klimatuppdrag/wsp-styrmedel-for-ett-transporteffektivt-samhalle_slutlig.pdf

Reckwitz, A. (2002). Toward a theory of social practices: A development in culturalist thinking. *European Journal of Social Theory*, *5*(2), 243-263. https://doi.org/10.1177/13684310222225432

Reiter, B. (2017). Theory and methodology of exploratory social science research. *International Journal of Science and Research Methodology*, *5*(4), 129-150.

Sandqvist, K. (2009). *Det går bra utan bil – Tonåringars fritidsaktiviteter och bilberoende i två bostadsområden* [It's fine without a car - Teenagers' leisure activities and car dependency in two neighbourhoods]. Department of Child and Youth studies. Stockholm: Stockholm University.

Sattlegger, L., & Rau, H. (2016). Carlessness in a car-centric world: A reconstructive approach to qualitative mobility biographies research. *Journal of Transport Geography*, *53*, 22-31. https://doi.org/10.1016/j.jtrangeo.2016.04.003

Sayer, A. (1992). *Method in social science, a realist approach.* London: Routledge.

SCB 2024. *Sveriges befolkning* [The population of Sweden]. https://www.scb.se/hitta-statistik/sverige-i-siffror/manniskorna-i-sverige/sveriges-befolkning/#Nyckeltal

Schatzki, T. (1996). *Social practices: A Wittgensteinian approach to human activity and the social.* Cambridge, UK: Cambridge University Press.

Schatzki, T. (1997). Practices and actions: A Wittgensteinian critique of Bourdieu and Giddens. *Philosophy of the Social Sciences*, *27*(3), 283-308.

Schatzki, T. (2010). Materiality and social life. *Nature and Culture*, *5*(2), 123-149. https://doi.org/10.3167/nc.2010.050202

Schwanen, T., Kwan, M.-P., & Ren, F. (2008). How fixed is fixed? Gendered rigidity of space-time constraints and geographies of everyday activities. *Geoforum*, *39*(6), 2109-2121. https://doi.org/10.1016/j.geoforum.2008.09.002

Scottish Government. (2020). Securing a green recovery on a path to net zero: climate change plan 2018-2032 – update. https://www.partyof.wales/teithiau_car_car_journeys

Selzer, S., & Lanzendorf, M. (2022). Car independence in an automobile society? The everyday mobility practices of residents in a car-reduced housing development. *Travel Behaviour and Society*, *28*. https://doi.org/10.1016/j.tbs.2022.02.008

Shaheen, S. (2018). Shared mobility: The potential of ridehailing and pooling. In D. Sperling (Ed.), *Three revolutions – Steering automated, shared, and electric vehicles to a better future* (pp. 55-76). Washington, DC: Island University Press.

Shoshany Tavory, S., Trop, T., & Shiftan Yoran. (2020). Self-organized ridesharing: Multiperspective annotated review. *International Journal of Sustainable Transportation*, *14*(4), 270-279. https://doi.org/10.1080/15568318.2018.1542758

Shove, E. (2002). Rushing around: Coordination, mobility and inequality. Paper presented to the ESRC Mobile Network Meeting, October. London.

Shove, E. (2017). Matters of practice. In A. Hui, T. Schatzki, & E. Shove, *The nexus of practices: Connections, constellations, practitioners* (pp. 155-168). London: Routledge.

Shove, E., Pantzar, M., & Watson, M. (2012). *The dynamics of social practice: Everyday life and how it changes*. London: SAGE Publications Ltd.

Shove, E., Watson, M., & Spurling, N. (2015). Conceptualizing connections: Energy demand, infrastructures and social practices. *European Journal of Social Theory*, *18*(3), 274-287. https://doi.org/10.1177/1368431015579964

Spurling, N., McMeekin, A., Shove, E., Southerton, D., & Welch, D. (2013). *Interventions in practice: Re-framing policy approaches to consumer behaviour*. Manchester, UK: University of Manchester Sustainable Practices Research Group.

Strömblad, E., Winslott Hiselius, L., Smidfelt Rosqvist, L., & Svensson, H. (2021). Adaptive travel behaviors to cope with COVID-19: A Swedish qualitative study focusing on everyday leisure trips. *Sustainability*, *13*. https://doi.org/10.3390/su132312979

Strömblad, E., Winslott Hiselius, L., Smidfelt Rosqvist, L., & Svensson, H. (2022). Characteristics of everyday leisure trips by car in Sweden – Implications for sustainability measures. *Promet – Traffic & Transportation*, *4*, 657-672. https://doi.org/10.7307/PTT.V34I4.4039

Tennøy, A. and O. Hagen (2020). *Reallocation of Road and Street Space in Oslo: Measures for Zero Growth in Urban Traffic, International Transport Forum Discussion Papers, No. 2020/14*. Paris: OECD Publishing. https://www.itf-oecd.org/sites/default/files/docs/reducing-car-dependency-oslo.pdf

Tillberg, K. (2001). *Barnfamiljers dagliga fritidsresor i bilsamhället - ett tidspussel med geografiska och könsmässiga variationer* [Daily leisure trips of families with children in a car-based society - a time puzzle involving geographical and gender differences]. Doctoral thesis. (Vol. 43). Uppsala, Sweden: Uppsala University.

Trafikanalys. (2017). *RVU Sverige – Den nationella resvaneundersökningen 2015-2016. Kvalitetsdeklaration* [RVU Sweden - The national travel survey 2015-2016. Quality declaration]. Stockholm: Trafikanalys.

Trafikanalys. (2018). *Så reser vi baserat på socioekonomi – Resmönster för 37 grupper* [How we travel based on socio-economics - Travel patterns of 37 groups]. Stockholm: Trafikanalys.

Trafikanalys. (2022). *Transporternas energi – och klimateffektivitet: Rapport 2022:1.* [Energy and climate efficiency of transport: Report 2022:1] Stockholm: Transport Analysis.

Trafikanalys. (2023a). *Fordon i län och kommuner 2022* [Vehicles in regions and municipalities 2022]. Official statistics of Sweden. https://www.trafa.se/globalassets/statistik/vagtrafik/fordon/2023/fordon-i-lan-och-kommuner-2022.pdf

Trafikanalys. (2023b). *Antalet bilar i trafik minskar för första gången på 30 år* [Number of cars on the road decreases for the first time in 30 years]. https://www.trafa.se/vagtrafik/antalet-bilar-i-trafik-minskar-for-forsta-gangen-pa-30-ar-13678

Urry, J. (2004). The 'system' of automobility. *Theory, Culture and Society*, *21*(4/5), 25-39. http://dx.doi.org/10.1177/0263276404046059

Van Eenoo, E. (2023). Zero-car households: Urban, single, and low-income? *Urban Planning*, *8*(3). https://doi.org/10.17645/up.v8i3.6320

Van Eenoo, E., & Boussaw, K. (2023). 'That's not feasible without a car': An exploration of car-dependent practices. *Transport Policy*, *144*, 1-10. https://doi.org/10.1016/j.tranpol.2023.09.021

Vilhelmson, B. (1997). *Tidsanvändning och resor. Att analysera befolkningens rörlighet med hjälp av en tidsanvändningsundersökning* [Time use and travel. Analysing the mobility of the population using a time use survey]. Stockholm: Communication Research Committee.

Vilhelmson, B. (1999). Daily mobility and the use of time for different activities. The case of Sweden. *GeoJournal*, *48*, 177-185. https://www.jstor.org/stable/41147369

Vilhelmson B. 2000. Daily travel: trends, limits, susceptibility to influence. In L. Lundgren (Ed.) Changing Environmental

Behavior, 91-104. Stockholm: Swedish Council for Building Research.

Vilhelmson, B. (2007). The use of the car – Mobility dependencies of urban everyday life. In L. Steg, & T. Gärling (Eds.), *Threats from car traffic to the quality of urban life* (pp. 145-164). Oxford, UK: Elsevier.

Winslott Hiselius, L., & Smidfelt Rosqvist, L. (2018). Segmentation of the current levels of passenger mileage by car in the light of sustainability targets – The Swedish case. *Journal of Cleaner Production*, *182*, 331-337. https://doi.org/10.1016/j.jclepro.2018.02.072

Ystmark Bjerkan, K., & Elvsaas Nordtömme, M. (2014). Car use in the leisure lives of adolescents. Does household structure matter? *Transport Policy*, *33*, 1-7. https://doi.org/10.1016/j.tranpol.2014.02.003

Åquist, A-C. (2002). *Tidsgeografi – en introduktion* [Time geography – an introduction]. Örebro, Sweden: Örebro University.

Appendix A

The papers associated with this thesis have been removed for copyright reasons. Find details about the papers here:
http://hdl.handle.net/2077/80255

Appendix B

Appendix B: Study 1 interview guide

- Syftet med intervjun är att prata om hur vardagen fungerar utan bil. Anledningen till att jag vill prata med just barnfamiljer är att det är en tid i livet som sätter extra krav på samordning och att det är i samband med att man får barn som många skaffar bil.
- Vi kommer först att prata om hur er vardag ser ut och hur ni organiserar den som familj. Sedan går vi in lite mer på det här med att vara utan bil, vad det innebär. Vi pratar generellt om hela familjens vardag men när jag ställer frågor om hur du upplever olika saker så kan du svara ur eget perspektiv.
- En del av frågorna är ganska öppna så ta dig tid att fundera så kommer jag att komplettera med följdfrågor.
- Jag inleder med några frågor om hur eran vardag ser ut.

Inledande frågor om vardagen:
Familjekonstellation och
boende:_____
Vad arbetar du med (el. annan sysselsättning)? _____
Antal timmar i veckan? _____
Vad arbetar din partner med (el. annan sysselsättning)?_____
Antal timmar i veckan? _____
Din sysselsättning: Plats/avstånd från
hemmet_____Arbetstider_____Flexibilitet?____
Partners sysselsättning: Plats/avstånd från
hemmet_____Arbetstider_____Flexibilitet?_____
Förskola/skola? Avstånd från hemmet _____km. Vanliga tider för lämning och hämtning_____
Skulle du kunna börja med att berätta lite om hur en vanlig vardag ser ut för er? (Bakgrund till arbetsfördelning)
→ Vilka ytterligare tider och platser har ni att förhålla er till? Fritidsaktiviteter och hobbies?

Huvudfråga	**Ev. följdfråga**	**Exemplifierat/motfråga**
Resor i vardagen		
1. Vilket är ditt huvudsakliga färdmedel till arbetet/skolan?	Din partner? Varför just dessa färdmedel?	
2. Brukar du uträtta ärenden under resan	Hur påverkar det resan och val av färdmedel?	
3. Har du (och/eller din partner) flexibla arbetstider?	Möjlighet att arbeta på distans? I hur hög utsträckning utnyttjas det?	Om du arbetar hemifrån, vilken typ av arbetsuppgifter gör du då? Möten?
4. Hur reser ni när ni ska träffa släkt och vänner?	Färdmedel? Hur tycker du att det fungerar?	
5. Hur reser ni annars på fritiden?	Färdmedel	Hobbies och fritidsaktiviteter? (Semester?) Används bilpool eller bilhyra?
6. Hur gör ni när ni handlar mat?	Var någonstans? Hur ofta?	Storhandlar/småhandlar? Internethandlar? Skulle det se annorlunda ut om ni hade bil?
7. Hur gör ni om ni behöver frakta större föremål?		T ex köpa/sälja möbler? Göra er av med möbler?
8. *Sammanfattande om resor:* Har det blivit så att ni delat upp olika resor/ärenden inom hushållet, att du gör vissa och din partner andra?	Hur blev det så (praktiska eller andra skäl)? Hur upplever du att det fungerar?	Tror du att den uppdelningen skulle se annorlunda ut om ni hade bil?

Sociala relationer		
9. Har ni släktingar i närheten?		Föräldrar Syskon Andra släktingar
10. Har ni hjälp av släkt och vänner/bekanta för att få ihop vardagen?	Är det någon av er vuxna i familjen som tar det huvudsakliga ansvaret för att samordna sådan hjälp?	Hämta och lämna barn på förskola/skola? Skjutsa till fritidsaktiviteter? Låna bil, bli skjutsad eller få hjälp med frakt?
Närhet		
11. Är det viktigt för dig att ha nära till aktiviteter i din vardag?	Är det något som är särskilt viktigt att ha nära?	Har det avgjort några val för er? T ex boendet, förskola, skola, arbetsplats, fritidsaktiviteter, var ni handlar?
12. Hur kommer det sig att ni bor just här?	Är ni nöjda med boendet? <u>Är det något ni skulle vilja ändra på, i så fall vad?</u>	
Vardag utan bil		
13. Hur kommer det sig att ni inte har bil?	<u>Upplever du att ni har valt det eller har det känts som ett påtvingat beslut?</u> Om de har valt det: Är det någon särskild faktor som möjliggör att ni inte har bil (boende, närhet till arbete/skola/släktingar/vänner)?	Ser ni likadant på detta inom familjen?
14. Hur länge har ni varit utan bil?	<u>Aldrig haft bil</u> eller gjort sig av med den av någon anledning?	

	Om ni haft bil tidigare, hur upplevde ni förändringen?	
15. Upplever du det som en begränsning i vardagen att ni inte har bil?	Gör det vardagen krångligare på något sätt? Skulle du säga att ni anpassar livet efter detta i hög utsträckning?	Finns det saker ni skulle vilja göra som ni inte gör för att ni inte har bil (t ex utflykter, besök hos släkt och vänner, storhandling)
16. Vad skulle underlätta livet utan bil?		Staden, boendesituationen Förväntningar från arbete/socialt
17. Vad är fördelarna med att inte äga bil?		
18. Vad skulle göra att ni skaffade bil?		Ändrade livsförhållanden? Större inkomst? Om någon av er till exempel fick arbete långt bort?
19. *Sammanfattande om IKT:* Du har ju nämnt… (handla/distansarbeta), finns det andra tillfällen då du/ni använder internet och mobilen för att organisera vardagen?	skulle du säga att internet och mobilen är viktiga hjälpmedel i vardagen? Kan det ersätta bilägande?	Sociala relationer?
20. Är det något mer du vill tillägga som jag inte tagit upp?		

Appendix C

Appendix C: Study 3 interview guide (adjusted to practice)

Jag är doktorand i kulturgeografi och forskar om förutsättningarna för bilfri vardag. Studien handlar om hur det funkar att delta i scouterna utan att ha egen bil. Det handlar om hur det funkar rent praktiskt men också om din upplevelse. Jag kommer att ställa frågor om

- Scoutdeltagandet och hur det är att vara Scout
- hur resor till möten och aktiviteter fungerar
- lite om ditt vardagssammanhang och hur det är att vara utan bil

En del av frågorna är ganska öppna så ta dig tid att fundera så kommer jag att komplettera med följdfrågor.

Jag undrar om det är ok att jag spelar in intervjun? Det är bara jag som kommer att lyssna på inspelningen. Du kan när som helst be mig pausa inspelningen om det skulle vara något specifikt du inte vill att jag spelar in. Du kommer att vara helt anonym i sådant som publiceras från den här studien. Du har rätt att avbryta intervjun när du vill, och om du skulle vilja komplettera något i efterhand går det jättebra att kontakta mig.

Om deltagande i Scouterna		
Kan du berätta om ditt/dina barns deltagande?	- Barn – Nivå? Deltagit hur länge? Hur ofta? - Själv aktiv? Roll? Hur länge? Hur ofta? - Brukar ni följa med på läger och hajker? - Om du har en planerande/samordnande roll, hur ser det deltagandet ut i praktiken?	
Hur kom det sig att du/ni började i Scouterna?	- Vad var det som lockade?	

Vad är scouterna för dig?	- Vad är det att vara scout enligt dig? Finns det en särskild kultur? Viktiga värden?	
Om resan till ordinarie möten	-	
Kan du berätta lite om hur det brukar gå till när det är dags att gå på Scoutmöte en vanlig vecka?	- Hur ser vardagsrutinen ut? - Hur brukar du/ni ta er dit?	Om det är barn som deltar – brukar du eller annan förälder hämta eller går barnet/barnen hem själv?
Hur tycker du att det fungerar att komma iväg till mötena?	- Känns det stressigt? - Är det svårt att orka ibland? Känner du trygghet i själva resan?	- Trafiksäkerhet? - Mörker? - Väder?
Om resa till läger, hajk eller annat?		
Brukar du/ni delta i aktiviteter utöver de ordinarie mötena?	Om ja, kan du berätta lite om dem?	- Var brukar ni åka? - Vad brukar ni göra? - Vad har ni med er?
	Samordnas resan? - Åker ni kollektivt eller med bil? - Föredrar du något av detta?	
	Om du/ni inte deltar, finns det någon särskild anledning till det?	
	Om ni samåker, hur brukar det organiseras?	Mail, sms, facebook?
Tror du att du/ni skulle delta oftare om du hade bil?		
Hur upplever du inställningen i Scoutkåren till att du inte har bil?		Är det något bra? Problematiskt? Helt neutralt?
Om vardagens sammanhang		

Bostad	- Var? - Hur (villa/lgh)? - Med vem?	
Arbete	- Vad arbetar du med? - Hur lång är arbetsresan? Hur reser du till arbetet?	
Sociala relationer	Var finns övrig familj/vänner?	
Andra fritidsaktiviteter?	Utöver Scouterna? Var och när?	
Om förhållandet till bilanvändande		
Hur upplever du att inställningen är i omgivningen till att du/ni inte har bil?		- Tror du att andra upplever det som avvikande? Besvärligt? Blir du ifrågasatt?
Om bilanvändande utifrån enkäten	Kan du berätta mer?	- Hur går det till? - När blir det nödvändigt och varför?
Kan du berätta om när du senast använde bil (som förare eller passagerare)?		Är det en positiv upplevelse?
Finns det situationer när du önskade att du hade bil?		Något sammanhang när det är särskilt svårt eller krångligt att vara utan bil?

Är det något du förväntade dig att jag skulle ta upp, som jag inte tagit upp? Något du vill tillägga?

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