



# The voluntarily carless and their leisure mobility

*Author:*

**Anton Florén Göransson**

*University of Gothenburg supervisor:*

**Eva Thulin**

*Trivector Traffic supervisor:*

**Lena Smidfelt Rosqvist**

Department of Economy and Society  
Unit for Human Geography

School of Business, Economics and Law At  
the University of Gothenburg

Master's thesis in Geography with major in  
Human Geography  
Spring semester 2022



**Trivector**



**GÖTEBORGS  
UNIVERSITET**  
HANDELSHÖGSKOLAN

Front page pictures and layout: Anton Florén Göransson and Lukas Florén

Thesis: 30  
Course: KGA 230  
Level: Master  
Semester/Year: Spring, 2022  
Academic supervisor: Eva Thulin  
Examiner: Ana Gil Solá  
Keywords: Carless, non-car owners, everyday mobility, leisure mobility, sustainable mobility, time geography, constraints

---

## Abstract

In the strive to decrease car dependence, novel ways of thinking about mobility is needed. In this regard, much can be learned from those who voluntarily have refrained from car ownership. However, few studies have focused on the leisure mobility habits of this group in particular. This thesis aims to advance knowledge about leisure related mobility of the voluntarily carless in Sweden, and by doing so, the thesis seeks knowledge and insights that can be useful in impacting future travel behaviour, specifically towards sustainable mobility.

A thematic analysis drawing from ten in-depth interviews was used to identify important themes. Theoretically, the thesis draws from concepts rooted in time geography, namely the concept of constraints. The results of the thesis show that the voluntarily carless are experiencing constraints in relation to their leisure related mobility, for example, reaching peripherally located outdoor activities is shown to be especially hard for the voluntarily carless. The results also indicate that the voluntarily carless are dependent on others for their leisure related mobility. Examples include both attending social events as well as children's hobby or sport practices, which frequently constituted a dependency on other car owners in everyday life. Additionally, the results indicate several limitations in the transport infrastructure that is employed by the voluntarily carless, primarily regarding cycling infrastructure. Moreover, the results have been discussed from a planning perspective, identifying areas of improvement for carless leisure mobility as well as in how they could contribute to decreased leisure related car use.

*This page is intentionally left blank*

## **Preface**

I would like to express my deepest gratitude to all the interview respondents, without whom this thesis would not be possible. Thank you for taking time out of your day to participate in my thesis. I am thankful to prof. Eva Thulin at the University of Gothenburg and Dr Lena Smidfelt Rosqvist at Trivector Traffic who have provided invaluable insights, wisdom and supervision throughout my work with this thesis. I also want to thank my friends Karl Åberg, Erik Magnusson and my brother Lukas Florén for providing a variety of feedback and assistance throughout the semester. Finally, I want to thank the whole team at the Trivector office in Gothenburg for giving me the warmest of welcomes. You made the sometimes quite tedious endeavour of writing a master's thesis much livelier and engaging.

May 2022

Gothenburg

Anton Florén Göransson

## Table of contents

<b>1. Introduction</b>	1
1.1 Aim and Research Questions	3
<b>2. Literature review and delimitations</b>	4
2.1 Carlessness	4
2.2 Leisure mobility	6
2.3 COVID-19 Travel behaviour effects	7
<b>3. Theoretical context</b>	7
3.1 Time geography	8
3.1.1 Constraints	8
3.1.2 Activity-based approach	11
<b>4. Methods</b>	12
4.1 Data collection	12
4.1.2 Semi-structured interviews	12
4.1.3 Pilot	14
4.2 Sampling strategies	14
4.3 Data validity	17
4.4 Method of analysis	18
4.4.1 Thematic analysis	18
4.5 Discussion of methods	19
<b>5. Results</b>	20
5.1 <i>Carlessness - a lifestyle</i>	20
5.2 <i>Carfree - problem free</i>	21
5.3 <i>Obstacles overcome by using services</i>	22
5.4 <i>Carlessness – a life swimming against the current</i>	23
5.5 <i>The city is not built for the carless</i>	23
5.5.1 <i>Limitations in the physical infrastructure</i>	23
5.5.2 <i>Structural limitations and constraints</i>	26
5.6 <i>Dependent on others for the leisure related mobility of the household</i>	27
5.7 <i>Adapting to close-by leisure activities</i>	28

5.8 <i>Carlessness requires active planning in everyday life</i>	29
5.9 <i>The carless thinking about the future</i>	30
5.9.1 <i>Children and old parents</i>	30
5.9.2 <i>Glancing at electric cars</i>	31
5.9.3 <i>Carfree but with access to cars?</i>	31
5.10 Additional findings	31
<b>6. Discussion</b>	32
6.1 Conforming to constraints	32
6.2 The leisure mobility of children	33
6.3 Motives for carlessness	35
6.4 Room for improvement	37
6.4.1 Cycling infrastructure	37
6.4.2 Reaching the periphery	38
6.4.3 Electric cars a threat to carlessness?	39
<b>7. Conclusions</b>	39
<b>8. Further research</b>	41
<b>9. References and sources</b>	
9.1 Printed publications	
9.2 Publications	
9.3 Internet sources	
<b>10. Appendices</b>	

# 1. Introduction

The extensive usage of cars has come to be connected to a plethora of problems facing most western cities and society, such as increased ambient particulate matter in cities, congestion, health-related issues, land-use issues as well as equality and social issues (Pant & Harrison, 2013; Hallberg et al., 2004; de Vos & Witlox, 2013; Gil Solá, 2013). Notably, the car fleet of today is dependent on combustion engines, and although efforts are being made to switch towards primarily electric propulsion, private car usage remains a significant contributor to greenhouse gas emissions.

Many countries have grown dependent on the usage of cars for their population's mobility needs. In Sweden, car dependency has become an unassailable problem in the past half a century, and today there are 470 cars per 1000 inhabitants (Swedish Transport Agency, 2022) and more than 2000 million trips were made using cars in 2020, far more than other modes of transportation (Trafikanalys, 2021). Furthermore, some trip purposes are more likely to be carried out using cars than others, as concluded by Lagrell and Gil Solá (2021) who show that the maintaining of social relations is a highly car-dependent activity, due to social activities inherently needing to take the mobility practises of others into consideration, as well as their geographical location. Witten et al. (2011) also indicate that as much as a third of the distance travelled by car is made for everyday leisure and recreational purposes. The same trend can be identified in Sweden, where leisure-related trips are the second most common trip-purpose. Furthermore, in 2020, Swedes drove around 27 billion kilometres for leisure and recreational purposes, which is greater than the distance driven in work and business purposes (Trafikanalys, 2021).

Due to the extensive usage of cars, Swedish authorities are aiming to decrease road traffic in order to reach national targets on reducing emissions and climate impact from the transport sector (The Swedish Environmental Protection Agency, 2020). The Swedish Environmental Protection Agency further notes that the implementation of novel technologies has contributed to a decrease in emissions in recent years. This aligns with a larger trend in past decades of improvements in transport technologies and their efficiency, lowering the emission of vehicles propelled by combustion engines. However, during the same time period, a similar decrease in the aggregate emissions from the transport sector has not been observed. On the contrary, Givoni and Banister (2013) identify a substantial increase in emissions from the transport sector during the same time period. This is partly attributed to the increases in transport efficiency generating an induced demand for traffic, i.e., the efficiency gains are being used to travel more. Consequently, it is generally recognised that technology fixes alone cannot solve issues derived from excessive car use. Accordingly, several strategies are employed in order to transition away from car dependency and reduce emissions. Planning-oriented approaches are common such strategies, with schemes such as improvement of public transport and densification, which have become increasingly

common in recent decades (McIntosh et al., 2014). However, in order to facilitate this transition, Lagrell and Gil Solá (2021) call for novel ways of thinking about mobility in the context of everyday life, and they identify that much can be learned from studying those who do not own cars (Henceforth labelled “carless”).

A similar standpoint is held by the consultant firm Trivector Traffic, who in collaboration with Lund University currently (2022) are conducting a larger long time scale quantitative study focusing on acquiring advanced knowledge about everyday life travelling habits in Sweden. This research project has funding from the Swedish Environmental Protection Agency. The project seeks to use the new knowledge to add to more informed decisions in the strive to reach the national goals on reduction of emissions and climate impact from the transport sector. To sustain the sustainability transition efforts for the Swedish transport sector a more holistic perspective on travelling habits is needed. The project argues that additional knowledge about the travelling habits on an individual level needs to be established. Such knowledge could be used to form the basis for new transport policies, in finding solutions that further decrease energy consumption, as well as in contributing to a sustained conversion of the transport system in a sustainable direction. This thesis is consequently carried out in collaboration with the project and acts as a qualitative addition to their ongoing study with a specific focus on deepening the knowledge of travelling habits on an individual level.

Although carlessness is a fairly well-explored subject matter (Mitra & Saphores, 2020; Brown, 2017, Klein & Smart, 2017), much of the literature predominantly focuses on transport poverty and forced carelessness, i.e., people who cannot afford to own cars. However, few studies have been carried out focusing on a Swedish perspective, nor on households who are voluntarily carless, i.e., who possess the economic means to own a car but still do not. Moreover, few such studies adopt a focus on the Swedish perspective on this issue. There are some instances of research with such a focus, whereas Lagrell’s and Gil Solá’s 2021 paper focuses on the car use of the carless from both a Swedish and a more general perspective. Lagrell’s et al. (2018) paper also focuses on the mobility needs of voluntarily carless households with children in Sweden and how they are organising their everyday life. However, the leisure mobility habits of households who are voluntarily carless remain an uncharted subject and will consequently be the focus of this thesis.

## 1.1 Aim and Research Questions

This thesis *aims* to advance the knowledge about leisure related mobility of the voluntarily carless in Sweden. In doing so, the thesis seeks knowledge and insights that can be useful in impacting future travel behaviour, specifically towards sustainable mobility.

This thesis is guided by the following research questions:

- How do the voluntarily carless in Sweden manage their mobility, especially concerning leisure?
  
- In what leisure mobility-related situations is carlessness an advantage and when does it constitute a problem?
  
- How could problems related to carless leisure mobility be alleviated and how could such solutions be used to bolster a shift towards more sustainable mobility?

To answer the research questions this thesis has employed a qualitative approach, relying on interviews and thematic analysis to collect and analyse the data.

## 2. Literature review and delimitations

Two key concepts that are utilised in this thesis are carlessness and leisure mobility. The following chapter will delimit what these concepts entail in the context of this thesis. The chapter also provides a literature review regarding these concepts in order to provide context for the results presented in the thesis. Additionally, the chapter will also discuss how the COVID-19 pandemic affects and alters travel behaviour.

### 2.1 Carlessness

This study focuses on those who do not own any cars, i.e., the carless. However, this definition is not necessarily as simple as it might appear, and consequently, certain delimitations have been made. Although the phrase “carless”, i.e., someone who does not own a car, might imply not having access to a car at all, carlessness does not necessarily entail that. Lagrell et al. (2018) concluded that the carless often rely on others to fulfil their mobility needs, either through the use of carpool services or through other means of collectively using cars. In their study focusing on carless families, they found that such a strategy could encompass the borrowing of cars from parents or friends. In other situations, carless households with children would rely on friends to drive their children to sports events outside of the local neighbourhood. Lagrell et al. observed how this situation would sometimes result in a feeling of dependency and of being a “free rider”, and sometimes this would result in their children being unable to partake in some sports or events. In other situations, it forced the carless households to conform to high-speed and car-dependent mobility through the renting of a car. However, such a situation would still render the household carless, as it still would not own a car, i.e., access to cars is not considered a disqualifying criterion for carlessness in this thesis.

Lagrell and Gil Solá (2021) studied the car use habits of the carless and found that they differ depending on both demographic factors as well as in which everyday-life context a carless individual is in. For example, elderly carless retirees are suffering from capability constraints, such as limited economic resources and declining physical ability with age, which generates larger differences in mobility when compared to car owners in the same demographic. This group was found to often travel by foot, whilst doing shorter trips and less trip chaining when compared to other groups. This applied both in general and when compared to the car-owners in the same age group. However, carless young adults were identified as the group whose mobility (regarding trip frequency and trip distance) differed the least when compared to the corresponding car-owning group within the same demographic. Lagrell and Gil Solá also found that carless individuals in general make both fewer and shorter trips, while conducting more trip chaining to overcome their lowered mobility when compared to car-owning individuals. They also found that there are differences in the way that carless and car-owning households manage their material flows (i.e., buying food or disposing of waste), where carless families make use of shops and amenities in their local vicinity to a

larger degree than car-owning households. Finally, and as previously mentioned, Lagrell and Gil Solá found that the maintaining of social relations was a more car-dependent activity than many other everyday-life activities. Such activities were found to need a higher level of flexibility due to their often unpredictable nature, where plans and meeting locations often are changed. It also requires a higher level of conformity from participants to adapt their travelling habits to those of others – when visiting friends or family living in car-dependent suburbs the means of mobility usually used by the carless might not be as suitable, thus causing demand for the use of cars in such situations.

Due to the high car dependency of most western countries where car usage often is the norm, Brown (2017) concludes that a majority of households that do not own cars lack one due to being at a socio-economic disadvantage or since they are suffering from economic constraints. Brown thus distinguishes between those households that do not own cars due to choice and those that do so due to constraints. Klein and Smart (2017) also conclude that carlessness generally is temporary, i.e., when the constraint can be overcome, carless individuals often purchase a car. This trend is in line with Givoni and Banister's (2013) findings, where increased income was found to generate increased car use. Individuals in low-income groups also tend to use bikes, public transport or walk to a larger extent than other income groups (Givoni & Banister, 2013). Furthermore, Mitra and Saphores (2020) conclude that members of involuntarily carless households usually are less mobile, both compared to households who own cars and those who are carless by choice. They also found that there are geographical differences between the involuntarily and voluntarily carless, where voluntarily carless households are more often located in denser urban areas with diverse amenities accessible to them in their vicinity. Mitra (2016) also found that voluntarily carless households travel shorter distances when compared to both households with cars and involuntarily carless households, which indicates that those who are voluntarily carless live in closer proximity to the activities and destinations they access in their day-to-day life. Thus, a considerable difference emerges among the carless, where being carless by choice would imply that such individuals would have a very different view on their personal mobility, than those who are carless by constraint. This thesis will consequently focus on those who are voluntarily carless, or carless by choice.

Voluntary carlessness has become increasingly studied in recent years. There are often problems associated with being carless in a car-dependent society. One commonly identified such issue, the disposal of bulky waste, was studied by Hull (2019). Although it could be perceived as cumbersome to dispose of such waste without a car, her qualitative study indicates that the voluntarily carless was overall content with the way disposal of bulky waste worked for them and did not perceive it as a major issue connected to their carlessness. Another often perceived problem is being a parent whilst carless. This is an issue studied by both McLaren (2016) and Lagrell et al. (2018). Even though parenthood is often connected to excessive usage of cars, McLaren (2016) found in her study focusing on

the mobility habits amongst parents in Vancouver that parents and cars can be delinked. However, this de-linkage was rarely found amongst low-income carless households but was instead more prominent in families living in denser urban areas. Furthermore, Lagrell et al. (2018) who focused on voluntarily carless households with children, found that leisure mobility for carless parents often constituted an issue where the lack of car ownership was causing a limitation in their everyday life. Meanwhile, Lagrell and Gil Solá (2021), which focused on car use of the carless in general, also found evidence pointing in a similar direction as Lagrell et al. (2018), i.e., that the maintaining of social relations was a car-dependent activity and therefore a problem for the carless. However, their results also show that mobility concerning leisure is only weakly car-dependent for both the carless and car-owners.

## **2.2 Leisure mobility**

Leisure time is a large part of life for most humans. By some estimates, most westerners have approximately 140 days each year available to them for leisure (Castree et al., 2013). Paggi et al. (2016) also underscore the importance of leisure for the overall physical health and wellbeing of the population. However, leisure is not a universal term, and the activities that it encompasses might vary. An older, yet common definition of leisure is that it is non-productive consumption of time (Thorsten, 1953). However, this definition still fails to embody the large variety of activities that modern people might undertake in their free time. Consequently, this thesis will follow the definition of Strömlad et al. (2021, p.5):

*...visiting family and friends, going to restaurants and cafés, entertainment and culture, outdoor activities, exercise/training/sports, other hobbies or club activities, shopping for fun, and participating in or accompanying children in their leisure activities.*

Note that other activities not included in this definition might still be considered leisure-related errands in this thesis. However, this thesis has an everyday perspective and will thus not focus on holiday-related trips, as they are beyond the scope of the thesis. Instead, the focus is on leisure activities that can be carried out during everyday life. However, trips that include a few overnight stays are still accepted as a part of this thesis' focus, since such trips directly impact the transport solutions that individuals might employ to overcome their everyday-life mobility needs. Although work-related trips such as travelling to and from work still constitute the majority of all travel, trips related to leisure activities are the second-largest source of travel in Sweden (Trafikanalys, 2021). Loa et al. (2021) underline a distinction between different types of non-mandatory activities, where they describe how they are either *maintenance* or *discretionary*. Maintenance-related activities include grocery shopping or the visiting of health care providers whilst discretionary encompass recreational activities, i.e., the type of activities this thesis focuses on. Ortuzar and Willumsen (2011) conclude that individuals tend to have greater control over when discretionary trips are carried out, as opposed to mandatory ones, such as work-related trips.

### **2.3 COVID-19 Travel behaviour effects**

This thesis was conducted during the spring of 2022, roughly 2 years after the WHO announced the spread of the sars-cov-2 virus was widespread enough that it constituted a pandemic. In the following years the COVID-19 pandemic has not only claimed the lives of millions, but it has also had profound impacts on global trade, economy, manufacturing as well as travel behaviour. Consequently, the results of this thesis must be seen in the context of pandemic impacts on travel behaviour. Indeed, the COVID-19 pandemic has been found to impact travelling habits globally. Several studies from around the world indicate an ongoing modal shift where the use of private cars has increased at the cost of public transport (Beck et al., 2020; Aloï et al., 2020; Šinko et al., 2021). In Sweden, a similar shift has been observed, where the modal share of public transport decreased dramatically in the early stages of the COVID-19 pandemic. The total number of leisure-related trips carried out also decreased during the same time period (Trafikanalys, 2021). However, Strömblad et al. (2021) conclude that the long-term impacts from other disruptive events (SARS epidemic in Taiwan as well as the Ebola outbreak in Sierra Leone) were negligible, and people returned to their normal travel behaviours fairly quickly. This demonstrates a level of resilience in people's travelling habits, as they are shown to return to their normal routines and means of transportation once the disruptive event ends. Although the disruptive nature of the COVID-19 pandemic has been much longer-lasting than other similar events, the results from studies by both König and Dressler (2021) as well as de Haas et al. (2020) indicate that the expected long-term effects of the pandemic to be weak, regarding modal share and mobility behaviour. However, they also indicate that the slight increase in modal share for walking and biking that has been observed might persist, as their results show that people are more willing to continue to walk and use bikes after the pandemic. Regarding leisure mobility, Strömblad et al. (2021) studied how people adapt their leisure related mobility practices due to the pandemic. They found people to be fairly non-objecting about decreasing their number of leisure trips, but that the freedom to carry out such trips in a flexible manner was very important. Strömblad et al. also argue that the pandemic has shown that people are willing to change or adjust their behaviour – not only for their own sake or wellbeing, but also for others. Consequently, Strömblad et al. conclude that this knowledge could be used when trying to motivate people to change their behaviours with regard to sustainability as well as health and wellbeing. They thus argue that the pandemic has shown that it is possible to achieve substantive changes in travelling behaviours.

### **3. Theoretical context**

Time geography has constituted the primary theoretical framework in this thesis. The leisure mobility of voluntarily carless households will be seen through the lens of this framework. Specifically, this entails a focus on different constraints that carless households experience in their everyday life, specifically regarding leisure mobility. The framework allows for the collected data, i.e., the information regarding how the interviewees manage their leisure

related mobility, to be viewed from a geographical perspective and allows for nuanced analysis. The time-geographical concept of constraints further allows for the answers of the interviewees to be conceptualised which in turn eases the process of conducting the thematic analysis.

### **3.1 Time geography**

The conceptual framework of Time-geography was developed by the Swedish geographer, Torsten Hägerstrand (1916-2004) (Ellegård, 2019). There are several general concepts connected to Time-geography, the core of which is *time-space* (Ellegård, 2019). Hägerstrand considered time and space as related matters and not as separate entities. Everyday-life takes place within the confines of both time and space - whereas everything takes place at some time and at some place. The conjoining of time and space thus recognises both entities as mutually constituted. Time-geography further recognises that humans are goal-oriented beings, intent on accomplishing different 'projects' - such as buying groceries or performing different leisure activities. The realisation of any such project entails and necessitates movement, which constitutes a trade-off between space and time resources. A visit to the grocery store uses time and such a sequence of movement and stationary activities in pursuit of accomplishing the project - to buy groceries - can be described as a *time-space path*. However, individuals' capability to conduct different projects can differ vastly, as they suffer from different levels of constraints (Castree et al., 2013). Ellegård (2019) concludes that an individual's time-space path can cross with others, thus *touch(ing)*. Consequently, time geography stretches beyond the four dimensions of time-space, implying a more complex relationship between the touching time-space of different individuals.

#### **3.1.1 Constraints**

Movement within time-space always constitutes some level of constraint, which in the concept of time-geography are divided into several categories. There are coupling constraints, i.e., the need to converge with other individuals in order to carry out and achieve different tasks. There are also capability constraints, i.e., the need to eat or sleep, but also with age or ailment lacking physical ability. The capability to move in time-space might also vary depending on an individual's access to different means of mobility. Socio-economic limitations might thus also constitute a capability constraint, as it might hamper or limit the access to different means of mobility. There are also constraints regarding authority, where individuals must conform to laws such as speed limits or the opening hours of shops or businesses. Such rules will in turn dictate the frame within which individuals can operate (Castree et al., 2013).

To illustrate the capability constraints, Hägerstrand (1970) uses what he describes as "daily prisms", which is a sort of two-dimensional depiction of different individual capability constraints (see *Figure 1*). This figure showcases how different individuals have varying

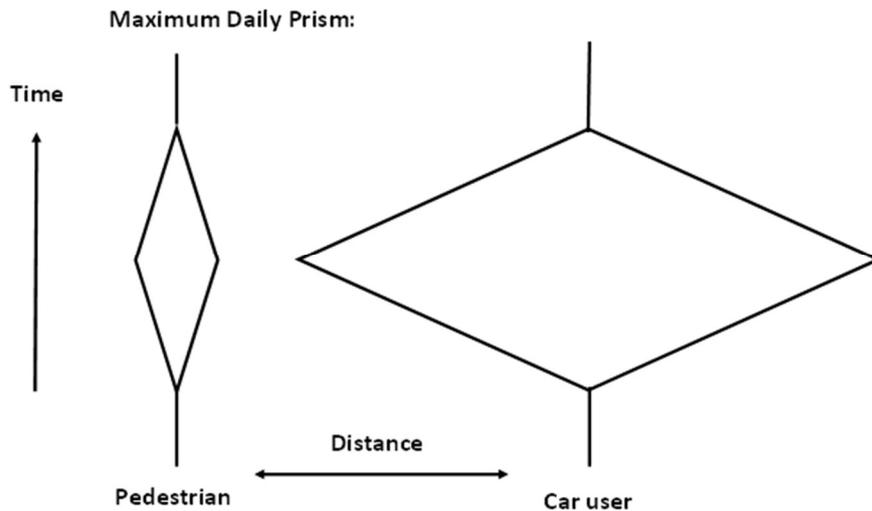


Figure 1: Daily Prism. Hägerstrand (1970) p. 13 (Modified for quality).

maximum geographical reach over the course of a day. Hägerstrand describes how each individual has a home base, i.e., a place where they keep their personal belongings and sleep. This home base is represented by the start of the prism. Different individuals have access to varying means of transportation and will thus have vastly different capabilities to travel each day. Such a difference is visualised on the horizontal axis in *figure 1*. The widest parts of the prism depict the maximum distance an individual is able to travel before they have to return to their home base at the end of the day, in order to fulfil their biological constraints, i.e., sleep and eat. With regards to the focus of this thesis, carlessness could also be considered a capability constraint. There is a substantial difference in mobility when comparing car owners and carless households. However, the delimitations concerning voluntary carlessness would suggest that this constraint is not a consequence of economic limitations amongst the delimited group, the lack of car ownership in their households might still pose a limit to their maximum width of their daily prism.

The coupling constraints that individuals suffer from, with regards to having to converge and coordinate with other individuals in order to carry out different tasks, often result in what Hägerstrand (1970) describes as a bundle (*Figure 2*). A bundle appears when several people converge and meet to carry out an activity. In this regard the carless might find reaching the various bundles they need to attend in their everyday life much harder when compared to a car owner. Visiting work, attending meetings, picking up children from school and joining them for their sports practice, all require movement in time space to attend different bundles in order to carry out different activities. Consequently, members of carless households might find that they can attend fewer bundles in a day when compared to someone who owns a car. However, Frändberg et al. (2005) conclude that the use of telephones and various ICT has decreased the need to physically converge, which consequently eases the paths of all bundle members. Since many leisure-related activities

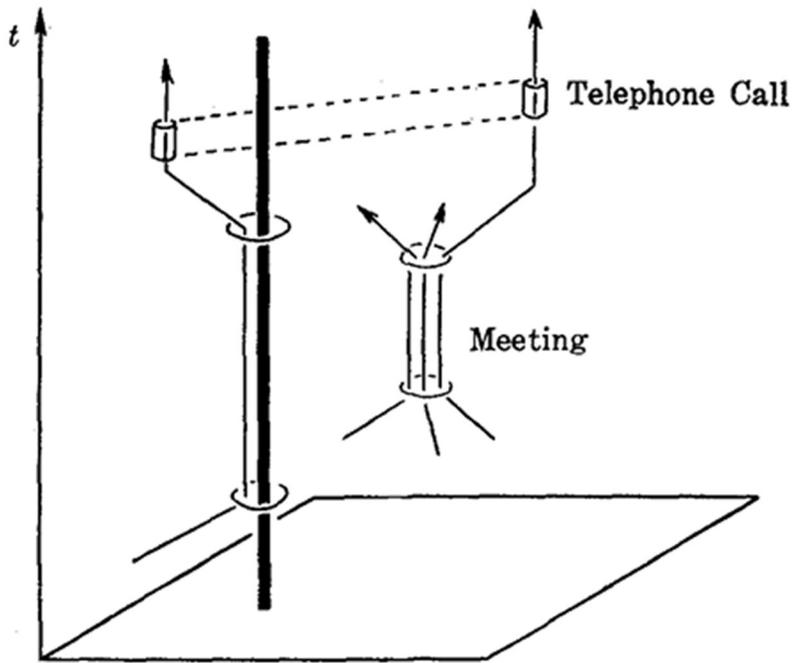


Figure 2: Bundles. Hägerstrand (1970) p. 14

still depend on several individuals converging to one place, e.g., the practising of sports or other hobbies, ICT might prove to impact the coupling constraints connected to leisure-related bundles to a lesser extent than for example work-related bundles. However, some leisure time activities might still be enabled or made easier by ICT, whereas different social chat functions enable people to connect and meet virtually. Although a growing phenomenon, online social life is most predominant amongst the gaming youth, or those under the age of 25, as concluded by Varsaluoma and Väänänen (2019). It could consequently be theorised that ICT will have a larger impact on leisure-related coupling constraints in the future, as this group grows older and larger.

The final type of constraint described by Hägerstrand, authority constraints, also constitute a framework that individuals need to conform to in their mobility. Ellegård (2019) concludes that all citizens are subject to the laws of the nation they live in and that they must follow them, otherwise they risk various forms of punishment. She further describes how authority constraints also delimit who might access different places or different buildings. Employees can also find that their work hours are acting as a sort of authority constraint. Such a constraint might however vary depending on the work situation of particular individuals. Those who have flexible work hours might be constrained to a lesser degree than those who need to carry out their work tasks during particular hours. However, Ellegård also delimits how the authority constraints might be further impacted by an individual's access to different means of mobility. Someone who is reliant on the use of public transport might be subjected to both a coupling constraint as well as authority constraints, as they aim to use e.g., the bus to conform to their work time schedule. In contrast, an individual who for example owns a car and who has a flexible work schedule are suffering from fewer and

weaker coupling and authority constraints than other groups, as they are able to overcome and avoid them. With regards to leisure mobility in particular, there are several types of activities that might be impacted by authority constraints. For example, those who practise a sport or who play in a choir might find that they are confined to practise their hobby at particular times, as the practice often can be dictated by access to facilities or scheduled training events. Such individuals must then confine their practice to the existing structures that govern when the practice can take place.

### **3.1.2 Activity-based approach**

With its roots within time-geography, social-psychology and transport research, the activity-based approach focuses on the question: *why do we travel?* (Frändberg et al., 2005). This is an often-overlooked issue, as much focus within this field often fixates on *how* we travel. This approach can be a useful tool to highlight the different opportunities individuals have as they live under different circumstances. Consequently, the activity-based approach provides an additional framework and perspective from which the particular circumstances of the individuals partaking in this study can be viewed from.

Not unlike time-geography, the activity-based approach is based on the presumption that individuals are conducting activities in different locations throughout their surroundings. Frändberg et al. (2005) describe how all people can be considered to live geographically scattered lives. They further conclude that people have become increasingly mobile, and that life to an increased extent is spent outside of the immediate surroundings of the home. This trend is considered strong enough that it today is a necessity to rely on transportation and communication to live a normal life. However, Frändberg et al. conclude that not all people live the same life, nor do they live under the same circumstances. Within the activity-based approach, Frändberg et al. divide the factors that might impact an individual's activity pattern into three categories: *the individual*, *the surroundings* and *the activities*.

The first of the categories, the individual, is associated with a number of factors, such as age, sex, education level, income or access to cars. All of these factors impact the way individuals travel and communicate. However, connected to the individual are also several more abstract factors such as attitudes or values. Some individuals might have a strong affection for bikes, which in turn would impact their mobility, both in their work-related commute as well as in their leisure time. In other cases, an individual might be forced to use the car in their work, whilst at the same time detesting mass motorism and ideologies connected to cars, which in turn would likely impact their leisure-related travelling habits. These individual factors can also be considered related to the concept of capability constraints that are mentioned earlier.

The second category, the surroundings, is primarily associated with the social surroundings of an individual and has a strong connection to the individual factors mentioned previously (Frändberg et al., 2005). What obligations an individual has on a personal level as well as what stage of life an individual is in would all impact the ways in which a person would travel or communicate. Someone who is a parent would have different obligations and thus different mobility patterns than someone who is a university student. However, it is also associated with the physical surroundings of an individual, i.e., the infrastructure in the vicinity or presence of public transport and its capacity. The physical surroundings differ vastly depending on if an individual is situated in a larger city or in a remote rural area. These factors will all impact the way individuals travel and communicate. With regards to car-free leisure mobility, the geographical location of an individual and its surroundings would dictate the possible ways an individual would communicate and travel. For example, someone living in a dense urban area would likely be able to access many restaurants, gyms or cinemas. However, the same individual might find that other leisure-related activities such as hiking, swimming or fishing are more inaccessible due to their surroundings regarding their physical nature and transport infrastructure.

The final category described by Frändberg et al. (2005) is the different activities that individuals need to carry out. There are both voluntary, more leisure-related activities that people attend, as well as more mandatory ones, such as work or school. These more or less mandatory activities such as attending school or visiting the dentist must be carried out at particular times and places that the individual often cannot influence. However, other activities such as visiting the gym, or a friend might be carried out on the behest of an individual almost whenever they want. Frändberg et al. (2005) differentiate between these two different activities regarding whether an individual can *choose* when an activity is carried out or not.

## **4. Methods**

In the following chapter the different methods, tools and research strategies that have been employed in this thesis will be explored and declared. Whilst being a qualitative study in nature, this thesis has utilised semi-structured interviews as a means of data collection. The interviews have been analysed using a thematic analysis.

### **4.1 Data collection**

#### **4.1.2 Semi-structured interviews**

This thesis utilised semi-structured interviews as a means of data collection. This approach bestows the researchers with several advantages, primarily a high level of flexibility. This is further supported by Castree et al. (2013) who conclude that an effective and flexible way of gathering new information is through conversation, i.e., interviews. This flexibility stems from the structure of the interview having a low level of fixity and a lack of need for

predetermined answers from the interviewees (Hjerm et al., 2014). This approach thus allows for a more dynamic conversation where the interviewee is allowed to in a less rigid manner explain their situation, thoughts or answers. In turn, this allows for a good opportunity for the researcher to catch unexpected answers and present relevant follow up questions to the interviewee (Esaiasson et al., 2017). Consequently, this dynamic approach fosters the preconditions for the interviewee to make a deeper level of reflection on questions that cannot be confined to shorter questions usually found in survey studies. This is often hailed as one of the strengths of qualitative research in general, where the more exploratory nature of the data collection method allows the researcher to collect data that would be unobtainable through other means of data collection (Hjerm et al., 2014). The objective of the interview is to facilitate an opportunity for the interviewee to answer the questions whilst being able to reflect on them on a deeper level. Dalen (2015) concludes that this requires a high level of human interaction and intersubjectivity between the interviewer and the interviewees.

It is always a risk that the researcher and the interviewee perceive the answers and the experiences that are discussed in different ways. Dalen (2015) describes how the researcher's interpretation of the collected data will depend on the relationship between the interviewee and interviewer. Hjerm et al. (2014) conclude that the approach demands that the interviewer is able to improvise and lead the discussion in different directions depending on its stage. To aid in this task, an interview guide was constructed prior to carrying out the interview (*See appendix 1*). The interview guide aids in ensuring that all interviewees are asked the same questions so that the comparability between interviews is retained. Although a semi-structured interview does not necessarily need to be carried out with questions in a predetermined order it is still necessary to retain a certain level of rigidity, which in this thesis has been achieved through the use of the interview guide. Hjerm et al. (2014) further note that an interview guide allows for the interviewer to present preconstructed questions, which in turn limits the risks of asking leading questions or questions that could hamper the validity of the study.

Less complex questions are asked at the beginning of the interview, whilst presenting questions that might require thought and time for reflection later, once the interviewee has had time to adjust to the situation. This aids in keeping the interviewee engaged throughout the interview, which is something that Esaiasson et al. (2017) underline as important. Interviewees were given time to reflect on the questions, taking caution not to rush them and making sure each question or issue is depleted before moving on. The interview guide aids in this process and has also been constructed to contain possible follow up questions to the different primary questions. The overall structure of the guide has been split into three stages. In the first introductory stage, the interviewee is informed of the purpose of the study and the interview, whilst giving time to make the interviewee comfortable in the interview situation and to build a preliminary level of trust. The second stage focuses on the

issue of carlessness and involves both simpler questions as well as questions requiring more reflection from the interviewee. The third stage of the interview then focuses on leisure related mobility habits of the interviewee and their connection to carlessness. The final stage of the interview focuses on some more general questions that might require more thought and contemplation from the interviewee.

Castree et al. (2013) point out several advantages with conducting any interview in a face-to-face setting. However, this study has for several reasons employed ICT technologies to carry out the interviews. This is a student thesis, and consequently, it is beyond its budgetary restraints to conduct any long-distance travel in order to carry out the interviews. Furthermore, the ongoing pandemic also makes any such journeys inadvisable. Considering these circumstances, the prudent solution has been to employ ICT technologies to overcome these issues. Flick (2017) concludes that the use of such technologies and the use of real-time video calls can recreate many of the advantages of face-to-face interviews. It can further be speculated that many people who might not be used to such technologies have used them to some extent due to the pandemic restrictions imposed in the last several years. Consequently, some of the disadvantages of carrying out such interviews might be overcome by an increase in the capacity to use such programs by the population in general. The video-call service Zoom has been the primary program employed. Castree et al. (2013) further note the importance of recording all interviews. Considering the nature of the method employed for analysis – thematic analysis – recordings are crucial. All interviewees have given their consent for the interviews to be recorded and transcribed.

#### **4.1.3 Pilot**

In this thesis, a pilot was carried out prior to starting the data collection. This allowed for the interview guide to be tested. The pre-test was carried out with a suitable individual that fulfilled the sampling criterion of the thesis, but who at the same time did not have any connection to the study. As noted by Dalen (2015) it is essential to conduct trial interviews, i.e., a pilot study to test the interview guide. Furthermore, the pilot identified a number of issues with the interview guide. Such issues were both structural, such as the identification of lack of follow up questions in certain areas, as well as the pilot-interviewee having trouble perceiving the inherent meaning of some questions. The pilot-interviewee also helped realise that some technical terms imbedded in the questions needed to be changed and simplified. Every such issue was then adequately addressed, and changes were made to the interview guide.

## **4.2 Sampling strategies**

As previously mentioned, this thesis has been carried out in collaboration with the consultant firm Trivector Traffic. This firm is during a period of one year (autumn 2021 - autumn 2022) conducting a larger quantitative study where they are exploring people's every-day life travelling habits. The study is utilising the GPS in the survey participants'

phones to gather information about their movement and travelling habits during a longer period of time, which for example will allow for the identification of changes in habits over time. This survey had approximately a thousand participants in the beginning when the data collection started. Survey participants stated their general personal data prior to participation, stating information such as age, gender, income, car ownership, etc. These survey participants live all across Sweden and are of various ages, genders and professions. The participants were also asked if they would consent to participate in any further studies. Finally, the participants were asked to state an email address through which any further requests for study participation could be mediated. Consequently, a significant amount of metadata is connected to each survey participant and there is also a means of contacting each participant. This metadata is excellent for applying delimitations and has been a prerequisite for the sampling and data collection of this study.

Although the GPS function is passively gathering data, participants manually correct and accept the data collected, on a week-to-week basis. This has contributed to a drop-off in participants over time. At the time the sampling was carried out, a significant drop-off from the survey had occurred. Such drop-off is expected, given the large number of participants and the timeframe of the survey. However, several hundred people were still participating when the sampling was carried out. It was this remaining group of survey participants that constituted the overall sampling frame for this thesis, i.e., those who were still actively participating in the survey in March of 2022, and who also had stated that they would consent to participate in further studies.

From this sampling frame, the delimitations of this thesis were applied to identify those who were suitable interview participants. The two factors that dictated the sampling have been income and carlessness. As this thesis studies those who are voluntarily carless, only survey participants who stated that no one in their household owns a car were selected. However, as stated previously, factors such as carpool membership were not a delimiting factor, only car ownership in the household. Although the carless factors were uncomplicated, finding a way to delimit those who are voluntarily carless is more precarious. Unsurprisingly, there was no metadata regarding if the survey participants were carless by choice or not, as this is an arbitrary definition. One approach to determine this could have been to simply ask the survey participants if they consider themselves voluntarily carless upon contacting them, however, such an approach has several disadvantages. Currie and Sendbergs (2007) argue that the term *forced car owner* is value-laden, since it implies that those who own cars are forced to do so, whereas that necessarily is not the case. Consequently, they strive to not label anyone in this manner, as it could be unethical and risk skewing the results of their data collection. In a similar fashion, voluntarily carless could also be considered as value-laden. As previously mentioned, Brown (2017) concludes that a majority of households that do not own any cars, do so due to socio-economic constraints. Consequently, an economical delimitation based on income provides an option to delimit those survey participants who

could be considered voluntarily carless. The metadata concerning income has 6 brackets, with the two first being *less than 20 000 SEK* and *20 000 - 40 000 SEK* in income per month and household. Currie and Sendberg (2007) conclude that transport poverty occurs when a household is forced to consume more travel costs than it reasonably can afford. Considering transport poverty factors, and the relatively high cost of car ownership, individuals in these household income brackets risks being carless by force. Consequently, the sampling was made so that only individuals who are in the income brackets exceeding 40 000 SEK a month and household were included. This sampling criteria still does not ensure that an individual is voluntarily carless, but on an economical level it still ensures that if the household needs to buy a car, they can from an economical perspective afford it considering their income. With this logic they have at some level made a choice *not* to buy a car, thus making them voluntarily carless. It is however, based on the delimitations alone, not certain that someone labelled as voluntarily carless in this thesis has made an active choice to not own a car.

Applying these two sampling criteria to the sampling frame yielded a list of 22 individuals. 16 women and 6 men of varying ages and residences. The skewed ratio between men and women does not necessarily entail that women are more likely to be voluntarily carless but it could be a reflection of the fact that women tend to have a higher response rate and willingness to participate in surveys and other studies than men (Smith, 2008).

These 22 individuals were contacted via e-mail and were presented with a request to partake in this thesis, i.e., to be interviewed (*See appendix 2*). Of these 22 individuals, 12 accepted the request. Interviews were then booked and planned with 10 of those who accepted the request, 6 women and 4 men. Given the delimitations made to the sampling frame, it was predicted that 10 interviewees would be enough to achieve thematic saturation. These individuals are of various ages and have their residence in different cities throughout Sweden (*See table 1*). Six out of ten had a driving licence, but a majority still did not have any access to cars. Given the delimitation on income as well as when considering the professions practiced by the interviewees, these interviews could be described as quite prominent, with sometimes influential positions. Furthermore, no delimitation was made with regards to interviewees living in cities, i.e., people living in rural areas could still have partaken in the interviews. However, as indicated by the previous research, most who are voluntarily carless tend to live in denser urban areas. This trend seems to correlate with the interviewees who partook in this thesis, as they all lived in urban areas. All interviewees gave their consent to the interview being recorded. Furthermore, all interviewees are anonymous in this thesis and are not presented or referred to with any defining features or information. The interviews themselves averaged in length at around 20 minutes, with a few stretching beyond 30 minutes in length.

Interviewee number	Gender	Age	City of residence	Household members	Driving Licence	Access to service	Access to cars (i.e., carpool etc.)	Profession
1	Woman	26	Stockholm	2	Yes	Excellent	No	Student
2	Man	42	Stockholm	1	No	Excellent	No	Transport planner
3	Man	27	Stockholm	1	No	Good	No	Web developer
4	Woman	41	Lund	4	Yes	Good	No	Researcher
5	Man	58	Falun	1	Yes	Acceptable	No	Transport planner
6	Man	30	Stockholm	2	No	Good	No	Student
7	Woman	47	Lund	5	Yes	Good	Yes - Carpool	Researcher
8	Woman	41	Uppsala	6	No	Excellent	No - rarely	Researcher
9	Woman	29	Gothenburg	2	Yes	Excellent	Yes - Carpool	Engineer
10	Woman	29	Uppsala	2	Yes	Excellent	Yes	Engineer

Table 1: Interviewee information

In summary, this thesis has utilised a criteria sampling strategy, where the different delimitations have been applied to the sampling frame. Dalen (2015) concludes that the researcher needs adequate information and knowledge about the background information and previous research of the subject or issue that is being studied in order to identify suitable criteria. Consequently, careful deliberation has been made when choosing and designing the criteria. This process has been eased by the low number of criteria applied to the sampling frame in this thesis. Only criterion connected to what could be considered as the dependent variables, i.e., voluntary (1) carlessness (2) having been applied to the sampling frame. Although Dalen (2015) urges caution when using terms stemming from quantitative research design in a qualitative study, such as sampling strategies, it can still be helpful to contemplate the details of the research design in a qualitative study. This could aid the readers in judging the validity of the results.

### 4.3 Data validity

This thesis does not seek to answer questions about *how* people travel, for such a task the methods employed are inadequate and the number of interviewees is far too few to make any observations that are able to be generalised to the population at large. This thesis instead seeks to answer the question of *why* people travel as they do, concerning the particular matters focused on in the thesis. In this thesis, the information gathered from the interviewees is constituting the data and consequently the results that are presented as well. When the data and results are derived in such a manner, Dalen (2015) concludes that it is ultimately up to the reader to judge if the results presented are relevant to them for their purposes. However, as the interviews have been analysed through thematic analysis, issues

of validity might still arise as the themes that have been derived are influenced by the researcher's interpretation of the interviewees' answers. Such issues are aided by the interview guide, as all interviewees have been presented with the same questions. It is however impossible to judge if the interviewees have perceived the questions in the same way. Naturally, such an issue cannot be accounted for. Given the specific delimitations made, it is however likely that most questions were perceived and answered in a similar fashion. Furthermore, the usage of thematic analysis removes risks of elite biases, where the results would rely heavily on one or two expert sources. Dalen (2015) describes how there is a risk within qualitative research that the results become based on only a few of the interviewees who are considered as experts, thus creating an elite bias. With the use of thematic analysis, the results and themes are derived from code stemming from all the interviewees, thus eliminating such biases.

## **4.4 Methods of analysis**

### **4.4.1 Thematic analysis**

The interviews have been processed through the use of a thematic analysis. This method allows for the extraction and identification of themes embedded in the data (Bryman, 2017). This method was first proposed by Braun and Clarke (2006) who present it as a strategy of combining several other qualitative data collection methods, e.g., grounded theory and discourse analysis. They define the method as a tool that can be utilised for the identification, analysis, and reporting of patterns (i.e., themes) within data. In this thesis, the data (i.e., the interviews), have been processed using a thematic analysis to identify several themes. Flick (2017) describes how this process involves several steps. The first of which is for the user to get familiar with the data. When working with recordings from interviews, Braun and Clarke (2006) conclude that it is elementary to this step to transcribe the data before any further analysis can begin. The transcription of the data in this thesis has taken a denaturalistic approach. Nascimento and Steinbruch (2019) concludes that such an approach removes any stutters or noises from the transcription, generating an easier to read document, whilst keeping true to the original speech. This in turn eases the next step in the process: generating code (Flick, 2017). Braun and Clarke (2006) conclude that this is a fundamental part of any thematic analysis. Dalen (2015) describes this as a process where data is broken down, conceptualised, and then put back together again in new ways. Dalen further describes how this is usually done in several phases, where the first phase includes more general coding, which includes the identification of key terms and phrases. This initial coding is then used to start identifying recurring themes in the data. In the final phase, any such themes are refined and graded in their strength. Some themes might be backed up by code from all interviewees. However, other themes might be fainter, only occurring in data from some of the interviewees. To ease the process, the computer program NVivo 12 was used to carry out the thematic analysis. This program greatly aids the entire process and allows for the identification of many themes, since it is capable of easily storing and accessing codes from several documents at once.

## 4.5 Discussion of methods

The low number of interviewees could be perceived as a weakness of the thesis' reliability. However, given the carefully deliberated delimitations of the thesis, which have been applied to a large sampling frame, it is likely that the number of interviewees is sufficient to justify the claims made in the results of this thesis. Furthermore, Lowe et al. (2018) argue that the number of observations in a qualitative study that is needed to achieve saturation is often guided by the rule of thumb. Although the decision to stop at 10 interviews primarily was guided by the need of achieving thematic saturation, time resources have also been considered. As this is a thesis carried out by one student, it would be, considering the thesis time frame, negligent to continue to carry out additional interviews even though thematic saturation is already likely achieved, as the interview, transcription and coding process demand significant time resources. Nonetheless, it is of course possible that additional themes would have been identified if a different sampling strategy had been applied or a larger number of interviewees participated in the thesis. However, given the sampling strategies applied to derive the ten interviewees who partook in this thesis, this is considered adequate in achieving the aim of this thesis.

Additional delimitations were also considered, to increase the likelihood that the interviewees would in fact be voluntarily carless. As previously mentioned, most voluntarily carless have their residence in urban areas. Consequently, an additional delimitation based on geographic location was considered, but the relatively small number of 22 survey participants that emerged when the first delimitations were applied suggested that additional delimitations were not feasible. This was later confirmed, as the response rate proved to be around 50%, further proving that additional delimitations would risk jeopardising the ability to achieve thematic saturation.

Furthermore, once the interviews were carried out, the delimitations made proved to have been sufficient, as only one of the ten interviewees stated that they would likely purchase a car for their household in the relatively near future. The other nine stated that they for various reasons would strive to continue to be a carless household. This proves that the delimitations made were adequate in identifying individuals who were voluntarily carless. Consequently, the sampling process can be considered as successful.

Since the interviews were carried out online instead of face-to-face, the risk of misunderstandings between the interviewee and the interviewer occurring could be considered increased. This could in turn hamper the quality of the results, as data is lost or misinterpreted. However, modern video call functions and communication technologies provide a very high-quality voice and video quality, where many of the negative aspects of online interviews are counteracted. The online interviews provided high-quality recordings, further lowering the chance of data loss. Furthermore, the pandemic and the consequent lockdowns and work from home solutions many companies and organisations have

employed has likely introduced the concept of video calls to a larger audience of people. Thus, it is likely that most people who would participate in a study such as this one would have at some point utilised some sort of video call service, either privately or in work related purposes. Consequently, it can be contemplated that some of the disadvantages with conducting qualitative studies through video call services has decreased or disappeared because of the pandemic.

## 5. Results

The interviews and the consequent thematic analysis resulted in a deepened understanding of how households who are voluntarily carless travel and how they manage their leisure related mobility. The thematic analysis resulted in several different themes, some of which contain several sub themes. These themes and the result of the thematic analysis will be presented in the following chapter. Some themes are concerning carlessness in general, while other focus more specifically on leisure related mobility. The chapter is following a structure where themes concerning carlessness in general are presented in the beginning, while themes concerning leisure related mobility are presented towards the end of the chapter.

### 5.1 *Carlessness - a lifestyle*

A clear theme that was found from the thematic analysis suggests that this group, the voluntarily carless, have established their lives in a manner that makes them less dependent on cars to fulfil their mobility needs. This usually involves having their home located in a central part of a larger urban area. Indeed, almost all the interviewees live in the denser areas of major Swedish cities. Although most interviewees stated that this was an active choice, to live in a dense urban area in order to forgo the need of car ownership, it was for a few interviewees' mere coincidence. Some simply grew up in urban areas in households which for various reasons did not own cars, and simply continued to live without the car. These interviewees could be seen to simply conform to the mobility patterns they already knew, making carless living more of a continued habit than an active choice.

The results do however suggest that a majority of the interviewees want to remain carless in the future as well. An overarching part of the motive for this, shared by most of the interviewees, was environmental reasons.

*[Carless living] was a very active choice - due to environmental reasons. I simply cannot reconcile 'the car society' with sustainability.*

Interviewee 7 – Woman, 47 y/o

Many interviewees stated that their concern for climate change was a driving factor for their choice to live without a car. Although this choice to forgo car ownership has resulted in

some distinct lifestyle choices for most of the interviewees, the results do not suggest that they themselves considered *carless living* per se as a distinct lifestyle choice. Instead, many of the interviewees were found to utilise bicycles as their primary means of mobility and they often hailed cycling as a lifestyle, associating it with many benefits. Rather than emphasising themselves as car free households, many instead identified themselves as cyclists. A palpable amount of code suggests that cycling has many advantages for the carless. Bicycles provided a high level of freedom and flexibility, allowing the interviewees to travel whenever they wanted, which was often hailed as advantageous when conducting unplanned leisure related activities. Many interviewees also valued the exercise aspect of using bicycles as a means of mobility. Furthermore, most of those who used bikes did not shy away from changing to winter tires and often used the bicycle all year round. Many of the interviewees also had access to or owned cargo bikes, which increased their carrying capacity within the range of the cargo bike.

However, even if a majority of the interviewees utilised bicycles in different capacities, often as a primary means of mobility, the results still suggest that this group uses several different means of mobility, often depending on the activity and the location of the destination. Many of the interviewees also used different means of mobility, depending on if they were travelling to their workplace or if they were travelling for leisure activities. Those who used public transport to get to their workplace often utilised bicycles when travelling to leisure related activities in their vicinity. Lastly, many also used a combination of walking and public transport or cycling and public transport. Some of the interviewees also had the option of bringing their bicycles onboard their local commuting train, which further extended their geographical reach.

## **5.2 Car free - problem free**

A large amount of code supports the theme *car free - problem free*. The interviewees were predominantly very positive and satisfied with their mobility, stating a plethora of different advantages as their reasonings. Primarily, not having to own a car was seen as strongly positive since the carless households did not have to deal with, think about or handle all of the different hassles or problems associated with car ownership. This includes not only the negative environmental aspects as previously mentioned, but also different cost and economical aspects of car ownership.

*I see many advantages [with carlessness]. I know about all the costs surrounding car ownership, not only the price to buy [a car] but I'm thinking about insurance costs and since I don't have a parking lot, that would also be an additional cost and I would always have to think about where I should park the car, not to mention the cost of service [of the car] and other such stuff. So, there are many advantages to avoiding cars.*

Interviewee 3 – Man, 27 y/o

The absence of worry about managing all the chores and tasks that car ownership would entail, as well as perceived time and energy gains from relinquishing such tasks was found in code from most of the interviewees. Code that recurred from almost all the interviews also suggest that it simply was not necessary to own a car, these carless households had structured their lives in a way so that very few activities actually required them to travel by car. Lastly, the cost of acquiring a driver's licence was also seen as a limiting factor and as an economic and time related problem by most of the interviewees who did not have one. Although many of the interviewees reckoned that they could overcome these problems today, they had already established a car free life, where the car simply had no place to fill. Consequently, many of the voluntarily carless found that there was no need to strive towards neither a driving licence nor car ownership.

### ***5.3 Obstacles overcome by using services***

Using different forms of services or alternative solutions was found to be especially important for the voluntarily carless for them to overcome the different hurdles and obstacles that carlessness might impose on them. The voluntarily carless households often found themselves in situations where issues or inconveniences arose due to lack of access to cars. Although they saw many advantages with carlessness, as previously mentioned, they likewise experienced several issues as well. Many resorted to shopping online in order to avoid having to travel to shopping malls located on the city's periphery. Others employed different food delivery services to avoid or limit the need to shop for groceries. This problem was perceived to primarily be derived from their lack of bulky cargo carrying capacity. This lack of cargo carrying capacity would sometimes limit or complicate some leisure activities. For example, one interviewee had trouble using public transport whilst transporting the equipment he needed for the football training sessions he was coaching. For others, the lack of cargo carrying capacity meant that their children could not practise certain sports, since it was impossible or very impractical to transport the equipment needed without a car. However, some of the interviewees could overcome this limitation by utilising cargo bikes, which provided them with some capacity to carry bulky goods. Some of the carless households were members of cargo bike sharing pools, which allowed access to some cargo capacity when they needed it. However, the range of such bikes was perceived to be limited and was often only used in the local area. As regards to carpool membership, the primary usage of the carpool for all of those who were carpool members was to do different leisure related trips. Examples include visiting friends in other cities and partaking or conducting different leisure related activities that could not be reached without using cars. Carpool membership granted those households who still needed access to high-speed mobility in some instances a satisfactory level of mobility, whilst still not having to purchase and own a private car.

#### **5.4 Carlessness - a life swimming against the current**

Many of the voluntarily carless described how they perceived themselves as living a life where they were challenging established norms, even living a life against the current. As described in previous themes, this group is overall very content or satisfied with their carfree situation. However, code from several interviewees suggest that both reactions from friends as well as the way the cities they live in are built contribute to a feeling of being an exception.

*For us this [carlessness] isn't such a big deal actually. It is often other people who find it strange. Perhaps because we have four children. There were many who thought that we should get ourselves a car when our oldest was born. Once our second child was born, there were definitely a lot of people who raised their eyebrows and who wondered why we didn't purchase a car. At this point most of our friends knew about our situation and reasoning, but still when you tell some people that we have four children, we often get to hear from some people that they might even feel sorry for us, that it would be so troublesome to not own a car, but I have never perceived this to be an issue myself.*

Interviewee 8 – Woman, 41 y/o

Similar sentiments were shared by many of the interviewees who felt that other people in their life or people who they might meet only occasionally often were surprised, bothered or even agitated that they chose to live their lives without owning a car or even having access to one. Additionally, code from the next theme, *this city is not built for the carless*, could also be seen to add to this, where different structural and physical limitations in the city contributed to the feeling of being an exception. A feeling that the city was not built for them. The voluntarily carless perceived that infrastructure for the different means of mobility they relied on often was subjugated to expenditures related to car infrastructure. Despite these feelings, code from almost all the interviewees suggests that the voluntarily carless households want to remain car free in the future as well.

#### **5.5 The city is not built for the carless**

Naturally, the voluntarily carless households do not primarily rely on cars as a means of mobility. Consequently, code from all the interviewees indicate several problems and limitations in the infrastructure for pedestrians, bicycles and public transportation that this group heavily relies on. These limitations are captured in the following two subthemes, *limitations in the physical infrastructure* and *structural limitations and constraints*.

##### **5.5.1 Limitations in the physical infrastructure**

As the bicycle is one of the primary means of mobility the voluntarily carless households rely on in their day to day life, a strong theme was identified where different limitations in the physical fabric of the city emerges, especially concerning bicycle infrastructure. Many of the voluntarily carless households who participated in this thesis live in central areas in larger

cities. Consequently, most of the households were overall satisfied and happy with the amount of cycling infrastructure that they had access to in their vicinity, as it granted them a high level of mobility and freedom to travel within the range of their bicycle. However, the character of this infrastructure often constituted problems for the carless households, as they might utilise the cycling infrastructure in a different manner and for different purposes than other groups.

These households utilise bicycles to get to a variety of different destinations, often for leisure related purposes. Those interviewees who had had children often cycled together with them to reach different destinations, or in some cases when the children were a bit older, encouraged them to independently use the bike to reach different leisure activities such as sports or musical training sessions. Although the interviewees might comfortably be able to travel to and from work by themselves using bicycles, the interviewees expressed annoyance that they were often scolded by other cyclists when they cycled together with their children because people thought that they were taking up too much space on the bike lane. They perceived the bike lane to be inadequately wide, making cycling together with children harder. Some of the interviewees with children also expressed concern to allow their younger children to use the bike to get to some destinations by themselves, because the route that would be used to reach some destinations did not have dedicated lanes separated from cars at some parts. This created a more complex traffic environment that they were not comfortable to allow their younger children to be exposed to when travelling alone. This limitation in the cycling infrastructure created ramifications for both the parents and children. To conform to this issue, they now had to either travel together, which could be a strain on time in their everyday life, or in some cases restrict the mobility and freedom of the child, who consequently might not be able to reach some leisure activities or friends on their own.

Another issue that emerges from the thematic analysis concerning limitations in cycling infrastructure is connected to cargo bike use. As the voluntary carless households to a relatively significant degree are utilising different sorts of cargo bikes for their mobility in everyday life, they consequently also point out several issues connected to its usage, where the physical infrastructure simply might not support its use. This was often connected to the width of the bike paths in their cities being too narrow and having too many sharp bends, or in some cases having the halfway point on road crossings being too short so that the bike would extend into the roadway.

*I think the bike parking in the city centre is poor. Even though the city claims that there are many bicycle parking slots, they are all only for ordinary bicycles – not for cargo bikes. I find this irritating. The same issue arises with the design of the bike lanes. They often have very high edges on both sides of the bike lane. The people who plan and design for bicycles, I feel like they can't be bicyclists themselves. I think this becomes obvious, because there are so*

*many [indicated with her hand: chicanes] and sharp turns on the bike paths. But the cargo bikes are so much longer so when I need to make a sharp turn to cross a walkway or a roadway this becomes very hard, and I constantly hit the edges of the bike lane. ... So even though Uppsala is gaining a lot of awards for being a bike friendly city, I still feel like Uppsala is very much a car-city.*

Interviewee 8 – Woman, 41 y/o

Interviewees living in other cities who utilised cargo bikes faced similar problems in their cities as well. A recurring code was the issue of parking the cargo bike. This was often connected to a lack of parking lots in the city with the adequate size for cargo bikes, or in some cases a lack of bicycle garages at the destinations where they could be securely parked, as cargo bikes often have a high economical value. For example, one interviewee could not find parking for the bike at home.

*So, I live in a tenant owned apartment which is newly built, and the house actually has a dedicated bike storage room. However, they haven't thought about the fact that there are cargo bikes and there is very little space which makes it very limiting, especially with the small width of the entrance. In the tenant-cooperative we contemplated creating a cargo bike pool, but this limitation has made this very difficult to do. I feel like it would be very alleviating for me to have a cargo bike. ... Especially when shopping for groceries, but it simply cannot fit in our house.*

Interviewee 3 – Man, 27 y/o

Lastly, some of the interviewees also exclaimed that they found issues with the way in which the structure of the city was being built. They found that the different destinations they wanted to reach in their everyday life could be very hard to get to without a car. Some of the interviewees with children found it irritating that different indoor-playground facilities often were located in industrial or commercial areas in the cities periphery which made them very hard to get to without a car. Others found different shopping centres being located on the periphery as irritating, as they were hard to reach without a car.

*I would like to see the city be built in a manner that limits the dependency on cars. That would greatly ease my everyday life. Instead shopping centres are being established in the periphery of the city and this is obviously very bad from my perspective as it very clearly is a concept built upon people using cars. ... I think this sends a signal that this isn't built for people like you. ... I'd like to instead see a focus on building and nurturing business in the city centre to regain some of the life in the centre.*

Interviewee 7 – Woman, 47 y/o

### **5.5.2 Structural limitations and constraints**

The other subtheme indicates that the voluntarily carless find or are facing several different issues that are structural in their nature. These structural issues are concerning both political and policy aspects as well as issues concerning limitations in the different services that this group relies on, such as public transport or carpools.

Concerning public transport, which is one of the primary means of transport, next to bicycles, that the carless rely on for their mobility, the interviewees are overall very happy with the access to public transport that they have. For especially the interviewees who lived in Stockholm, the access to excellent public transport was one of the cornerstones in achieving their mobility in everyday life. However, the carless households still perceived that there were several flaws and limitations in the systems they had access to. The public transport systems often were seen to work excellent when commuting to work, but when using it in more leisure related mobility they often saw several limitations. Several interviewees who lived in the more peripheral parts of the respective cities exclaimed that it could be hard to travel from one part of the periphery to another. The structure of the public transport was set up to transport people to and from the city centre, but not to get to different leisure related destinations in the periphery. However, most interviewees also expressed a level of understanding that this was an economical issue and that most people unlike them probably did not use public transport for the same reasons as them.

Connected to issues concerning public transport was also the lack of being able to bring their bicycle onboard public transport or trains. Some of the households' cities had opened some trains to allow for passengers to bring their bikes. This was seen as a large positive by these interviewees whose households then drastically increased their reach and therefore the number of destinations they could comfortably reach. However, many did not have this access, and furthermore some public transport systems did not allow bikes during rush hours. This was seen as a limiting factor for their long-range mobility and some interviewees contemplated that they could reach more leisure related destinations, such as friends or bathing sites, if they could bring their bike on trains or public transport. Lastly, many also requested more frequent departures on local public transport as well as more frequent departures on weekends in particular, as they felt that the lack of departures limited their mobility.

Regarding political structures, many interviewees exclaimed that they felt that politics and different policies were not considering them or catering to their needs. The interviews were conducted during the spring of 2022 and during this time it was announced by the Swedish government that all car owners would receive 1000 SEK in subsidies to compensate for increased fuel prices. Many of the interviewees perceived this to be an unfair policy that not at all was a solution to what they perceived as a problem. Others requested increased subsidies for buying electric cars and bikes or funding for public transport to be increased.

*Now that the increased fuel prices are on the agenda, I think that it's completely ridiculous to suggest that all car owners should receive money without even differentiating between those who live in rural areas and cities. And I understand that those who live in rural areas need access to cars to a different capacity than those living in larger cities where we could actually easily phase them out. So those kinds of larger political and structural changes I think are very important, both since they have a great symbolic value but also that cycling is valued completely differently. In this regard I am hoping for a shift in behaviour and attitude in favour of cycling.*

Interviewee 8 – Woman, 41 y/o

As previously mentioned, many of those who are voluntarily carless rely on different mobility services, such as carpools or food delivery services, to overcome and solve their mobility in everyday life. Although such services could provide a solution for some of the interviewees, some of the services might be lacking in other cities. Additionally, some services might be absent altogether. Concerning carpool services, some of the interviewees thought that the carpool services they had access to did not suit their needs or were located too far away from their house to be worth subscribing to. Other issues concerned the lack of certain types of vehicles. Some of the households had a need for larger cars with larger carrying capacity or more seats, which their respective local carpools lacked. For one interviewee it was very important that the carpool had electric cars, which their local pool did not have. However, as several of the interviewees periodically had a need for access to some level of carrying capacity that public transport or their ordinary bicycle could not provide, it was clear that many relied on cargo bikes for increased carrying capacity. For some interviewees this need was only periodical – they did not need it all the time. Consequently, several interviewees sought access to some cargo bike sharing pool.

*The cargo bike we own is in very poor condition. We are considering scrapping it. However, I'd very much appreciate it if there were some sort of mobility hub where I could borrow an electric cargo bike once in a while if I for example needed to go grocery shopping. It feels unnecessary that I should own one myself that I would only use on occasion and then it just stands around rusting away the rest of the time. Such a hub would be a good thing.*

Interviewee 4 – Woman 41 y/o

### **5.6 Dependent on others for the leisure related mobility of the household**

One clear theme that emerges that is supported by code from almost all the interviewees is that the voluntarily carless households are dependent on others for the mobility of their household in their everyday life, especially concerning their leisure related mobility. The interviewees described how they could easily get to and from their workplace on their own. However, for many leisure related activities, the dependency on others was more palpable. This usually entailed that others, often friends, family members, colleagues, or in some cases parents of their children's friends, provided mobility for the carless households

through the use of cars. This dependency was often not constant, but still recurring in their everyday life. Situations that increased this dependency were when the interviewees needed to attend different social activities, often when visiting friends or family who lived in areas outside of the public transport network in more peripheral parts of the city or region they lived in. Most of the interviewees stated that they often could use public transport on a large part of such journeys. However, they often required their friends to pick them up with cars to travel the last mile.

*We become more dependent on others. If we visit them, we will take the train and then they will come pick us up at the train station.*

Interviewee 4 – Woman, 41 y/o

However, interviewees also needed to have their friends pick them up by car when attending different sports or outdoor activities. One interviewee could not reach a site for frisbee golf using public transport and always needed his friends to pick him up if they were going to that spot. Others needed to coordinate with friends to get a ride to other outdoor activities such as bathing sites or places for orienteering in some hard-to-reach places that did not have public transport support.

Furthermore, those households who had children described how they often had to ask other parents for a ride, so that they could practise certain sports or attend some events. This often required a very active role from the parents to contact and coordinate with other parents to enable the children to attend different leisure related activities. In one household who had several children, it often became hard to do this, as it would be very hard to coordinate and enable several of their children to attend certain events as it simply was not possible to organise or find available seats. One of the interviewees also described how her daughter was completely dependent on other parents to drive her, in order for her to attend and practise certain sports.

*So, my daughter is practising orienteering and that's one of those sports that's probably completely impossible to practice without a car. So, her practice is completely dependent on me playing a very active role where I'm constantly asking people if she could get a ride.*

Interviewee 7 – Woman, 47 y/o

### **5.7. Adapting to close-by leisure activities**

A theme supported by a large amount of code from all of the interviewees, is that the voluntarily carless households are adapting their leisure activities to almost exclusively encompass destinations that are located within their local vicinity. For some this was relatively problem free, as most of their hobbies or leisure related activities were easily reachable and located in the vicinity of their home.

*We often visit different restaurants and museums for example, as well as visiting friends and family, which we often meet at different cafés or other centrally located places. ... I would also say that one of the primary reasons we moved to Stockholm was that we thought that 'wow, what a big city! Now we are going to make the most of it and capitalise on the many advantages of living in a larger city'. However, that has perhaps also made us less prone to venture outside of the city, as it's just easier to find things to do in the city centre.*

Interviewee 1 – Woman, 26 y/o

Similar sentiments were shared by many interviewees, where it was simply harder to do leisure activities outside of the city. This became more problematic for some of the households, as they often had a great interest in doing different outdoor activities. Such locations were often located in hard to reach or peripherally located places. This issue, i.e., the difficulty to reach these often-outdoor related leisure activities, was perhaps one of the most contentious and hard to overcome issues related to carlessness for many of the interviewees. Almost all the interviewees mentioned some outdoor related destination that they had trouble reaching due to their lack of access to a car. Someone exclaimed that they could not reach their favourite berry-picking site, others had very few options for bathing sites in the summer whilst another interviewee had trouble finding and reaching suitable bodies of water for touring-skating. Therefore, this often resulted in the interviewees not practising or visiting those places as much as they would have ideally liked to. However, most adapted their hobbies accordingly or were in some cases able to find substitutive activities that were easier to reach. One interviewee mentioned that when she felt an urge to walk in the forest or go for a hike, she would instead visit a local park.

The need to adapt to leisure activities located in the local vicinity was also apparent for those households who had children. They often had to restrict or limit the leisure activities their children attend, having them choose activities that were easy to reach. It simply was not possible with regards to time and energy to allow them to attend activities that were located far away from the home. However, these interviewees exclaimed that this usually was not an issue for the children themselves, who often had no trouble finding activities they enjoyed that were easier to reach.

### **5.8 Carlessness requires active planning in everyday life**

The results also indicate that it is crucial to play a very active role in the planning and coordination in everyday life for the voluntarily carless households. The interviewees primarily rely on cycling and public transport and in many cases a combination of both. This required the members of the voluntarily carless households to play a very active role in planning their trips. This is something that the interviewees thought that they would not have to contend with if they had owned a car. Instead, carless living required that the interviewees utilised different planning tools provided through for example their respective public transport provider, in order to make sure that the trip would work.

Many of the interviewees also argued that carless living required that they were physically active and did not back down from getting to their destination by themselves.

*The foundation [of carless living] is of course that you are quite physically active, that you don't have a problem with being physically active or shying away from bringing the bike onboard the train to cycle the last mile for example.*

Interviewee 7 – Woman, 47 y/o

### **5.9 The carless thinking about the future**

As previously mentioned, almost all the interviewees stated that they would actively strive to continue to live a carless life. However, many interviewees still have thoughts about the future and in some of the households, other members did in some cases not always share the stance on carlessness as their partners. Consequently, many had thoughts on things that could change their status as carless in the future, which derived the following three subthemes: *Children and old parents, glancing at electric cars and carfree but with access to cars?*

#### **5.9.1 Children and old parents**

Several of the interviewees described how they had discussed in their household that changes in the structure or needs of their closest family could make them reconsider their carlessness. Households who did not have any children often remarked that parenthood might be a factor that could make them reconsider and either buy a car or in some cases acquire a driving licence and join a carpool.

*For example, I think children could be one factor that could affect [our carlessness]. That would entail one more person and their leisure activities, travel as well as things like school and kindergarten that we would have to try and contend with during the course of a day.*

Interviewee 1 – Woman, 26 y/o

Another factor mentioned by several interviewees is that if their parents would become older and in more need of help and assistance, that would also be something that could constitute a change and that it could perhaps prompt them to acquire access to a car. However, one interviewee remarked that they could probably utilise the parents' car to carry out any such needs. Another interviewee argued that although older parents could constitute a need for car access, they would be more likely in such a situation join a carpool rather than purchasing a private car. Lastly, one interviewee remarked that if someone in the family would hurt themselves badly and lose the ability to for example use the bicycle, such a situation would drastically limit the mobility of the household and could probably prompt them to buy a car.

### **5.9.2 Glancing at electric cars**

As previously mentioned, one of the primary motives to being a carless household was environmental and sustainability reasons. However, several interviewees exclaimed that they, or in some cases members of their households, had some level of interest in novel car technologies, most often electric cars. Some of the interviewees thought that they were a sustainable solution to the mobility of the household. However, some interviewees stated that their primary reasoning for not buying one already was cost related. The household of one interviewee had decided that once electric cars went down in price and became available on the second-hand market, they would purchase one. For some other interviewees, the lack of electric cars in their local carpool was one of the primary reasons for them to abstain from joining it.

*I feel a great level of resistance for driving a car right now, since issues concerning sustainability are so central for me and my way of living. I would definitely not want to drive a car that was propelled by a combustion engine. But now in the near future carpools with electric cars might start to appear, and that would constitute a decrease in resistance to actually taking the step to become a carpool member.*

Interviewee 4 – Woman, 41 y/o

### **5.9.3 Carfree but with access to cars?**

In the final subtheme, it once again became clear that the voluntarily carless households sought to remain carless. However, they all mentioned many advantages connected to cars as a means of mobility. They often exclaimed that it would simplify many of their everyday life chores, such as shopping for groceries. However, more commonly mentioned, they contemplated that access to cars or car ownership would enable them to overcome some of the issues connected with their leisure related mobility. The different activities that they had trouble reaching, or the friends who lived in remote areas would be easier to reach or meet. Even if most of the interviewees often expressed an explicit desire to not purchase a car in the future, different carpool services were often mentioned as something that the households thought would benefit them. However, this required that such services were either located closer to their homes or provided a better service as regards to the types of cars available.

### **5.10 Additional findings**

Although not strong enough to constitute independent themes, interviewees often mentioned how the COVID-19 pandemic had impacted their mobility habits, as well as how they usually travelled when going on vacation or abroad. Unsurprisingly, many interviewees stated that they used heavy rail when travelling for vacation purposes. Two interviewees mentioned that the primary issue connected to train usage for vacation or leisure related mobility, was the high amount of planning and coordination that was demanded from them when travelling in Europe and across borders. Different train companies had different

systems, where departure and arrival times often did not match. This resulted in more complicated planning and more stressful travel. Furthermore, interviewees often mentioned how the COVID-19 pandemic had made them less prone to use public transport and had sometimes incentivised them to consider using cars instead. Reversely, many interviewees also contemplated that working from home had further contributed to a decreased need or urge to buy a car.

## **6. Discussion**

In the following chapter, the results will be discussed in the light of the conceptual framework employed in the thesis as well as its relation to previous research. This thesis has focused on how those who are voluntarily carless in Sweden manage their leisure mobility. This chapter will both discuss the results as regards to carless leisure mobility in particular, but also carlessness in general. Although the results are based on a limited number of interviews, the results still add nuance to existing research on the issue, as well as contributing with new knowledge and insights.

### **6.1 Conforming to constraints**

When analysing the mobility of the voluntarily carless who partook in this thesis from the time geographical framework as described by Ellegård (2019), it is clear that they are experiencing significant constraints, especially concerning their leisure mobility. As indicated by the results, the interviewees have adapted the different leisure activities they conduct in their everyday life to activities that are located within the vicinity of the home and often forgoing activities located in other areas as the means of mobility they employ simply cannot reach them. This indicates that capability constraints are impacting their reach, resulting in a daily prism with a smaller width than for example car owners. These capability constraints varied in intensity depending on not only the circumstances of the households, i.e., their geographical location, car access etc., but also on the type of activity and destination they tried to reach. Specifically, the carless households had issues with primarily two types of destinations. Firstly, many of the households had considerable issues with reaching different types of outdoor activities such as bathing sites or hiking trails. But they also had issues with different social events, such as visiting friends or family who might live in car dependent suburbs or similar such areas. Specifically, they had trouble travelling the last part of such journeys as they often were located outside of the public transport network or had insufficient coverage. Public transport might have sufficient coverage to reach the city or city district where the social event might be located, but still lacked last mile coverage. This resulted in a dependency on others for their mobility needs, where other car owners had to help the carless households to reach such destinations. This is suggesting that social events are a fairly car dependent activity, where certain events require some level of car usage to reach. This finding is further supported by previous research, whereas Lagrell and Gil Solá (2021) also found maintaining social relations to be a car dependent activity.

Consequently, both the findings in this thesis as well as Lagrell and Gil Solá's (2021) paper indicates that the carless often become dependent on car owners when conducting such projects.

With regards to the other hard to reach leisure related activities, often those related to sports practices or other outdoor activities, the results show that the carless households often have trouble reaching them. The carless households who partook in this thesis almost exclusively lived in central parts of larger cities throughout Sweden. This was often an active choice, where they purposefully located the household at a geographical location that would better support a carless everyday life. While locating the household in high density urban areas is perhaps one of the prerequisites for carless living, whilst it grants them excellent mobility as regards to work related commutes, it is at the same time perhaps the source of one of the largest leisure related issues connected with carlessness. Essentially, the results indicate that the carless households often have problems with reaching many leisure related destinations located outside of the vicinity of the homebase. The prism of these households is simply not wide enough for them to in a comfortable manner reach destinations outside of their local vicinity nor outside the public transport network. This suggests that the households are experiencing significant capability constraints concerning leisure in particular, as their means of mobility is limited in both physical distance and spatial range. Travelling longer distances was not uncommon in everyday life for many of the households, however such longer journeys were exclusively connected to work related commutes, not their leisure related mobility. Consequently, the width of the household's prism might be narrower if work related mobility was not considered. The carless households conforming to this constraint consequently spawned one of the stronger themes presented in this thesis, that the households are adapting and conforming their leisure related mobility to activities that are located in the vicinity of the household. Findings concerning this theme further strengthens findings from Lagrell et al. (2018), who presented similar findings indicating that the carless prioritised proximity. Lagrell et al. also illuminate the importance of the different geographical aspects of carless living and the consequent limitations in physical and spatial range of the carless household. The result of this thesis further confirms this notion while clearly indicating that leisure related activities in particular are amongst the types of destinations that often become out of reach as a consequence of the capability constraints derived from carlessness.

## **6.2 The leisure mobility of children**

Besides social activities as well as sports and outdoor activities, a third leisure related issue concerning carlessness that was identified in the results of this thesis was living with children. Those households who had children experienced additional issues where their children often had to adapt to and conform to carlessness which directly impacted the leisure activities they practised. The results indicate that limits in transport infrastructure in combination with carlessness often created both coupling and capacity constraints for the

carless households with children. As the households with children depended on bicycles for their mobility, the bicycles lack of range creates an initial capability constraint, limiting the children to practise sports or partake in other leisure related events that are in the vicinity of the household. Although the children themselves perhaps did not consider this as particularly problematic, they non the less were limited to some degree in the types of leisure activities they could partake in.

Although children in general are experiencing coupling constraints to a larger degree than adults, the results of this thesis indicates that the children of carless households might be experiencing such constraints to a lesser degree in some instances, while they might be even more prominent in other situations. The results indicate that the children of carless households might have a higher level of independence than their friends, whereas once they have become old enough to master cycling alone, they could roam more freely, granting them a high level of independence. Their coupling constraints would consequently decrease with age. However, several of the interviewees noted that their younger children were often restricted in their mobility as they perceived there to be limits in the physical infrastructure that made the parents uncomfortable allowing their younger children to travel alone. Lack of clear traffic segregation and high-speed limits on the roads contributed to this decision. To overcome this issue the parents had to accompany their children to many of their leisure activities. Not only does this generate an additional coupling constraint but it also increases the number of bundles household members need to attend in their everyday life.

Naturally, children still are subjected to the same capability constraints suffered by the household at large, which led to the children not being able to practise or partake in some events or sports. As previously mentioned, this sometimes resulted in a dependency on others. To overcome these issues, parents to the children's friends often had to be relied on, in order to for example give the children of the carless households a ride to sports practices. This not only creates a dependency on others for the leisure mobility of the household, but it also indicates additional coupling constraints. It is also noteworthy to point out that a similar dependency was experienced by the participants in Lagrell's et al. (2019) study, where carless households with children were depending on other parents to give their children a ride to for example football practice or other distant places. This dependency and these coupling constraints that the carless households with children are shown to experience is cause for discussion of McLaren's (2016) conclusion about the de-linkage of cars and parenthood. McLaren found that parenthood and cars indeed can be delinked, but that this primarily occurred amongst more well-of prominent households in denser urban areas where the prerequisite for carless living were better. Considering the economic delimitations applied in this thesis as well as the professions practised by the interviewees they could be considered as 'more prominent'. Additionally, almost all the interviewees in this thesis lived in denser urban areas. Bearing these factors in mind the results does

indicate that yes, this delinking is possible, whereas the carless households who had children appeared to overall not only be content, but rather quite satisfied with their mobility, whereas they successfully solve their everyday life mobility without car ownership. However, in the results a degree of dependency on other car owners to overcome the leisure mobility needs of their children can also be observed. It can thus be contemplated that the carless households with children either need to accept a higher level of capability constraints as regards to their children, or alternatively conform to car-mobility through a submission to a level of dependency of others, which thus would generate additional coupling constraints. As the carless households with children who partook in this thesis appears to choose the former in some instances, the notion of delinking parenthood and cars comes in to question. Is parenthood and cars truly delinked if they still have a level of dependency on the car ownership of others to solve the everyday leisure related mobility of their children?

### **6.3 Motives for carlessness**

Although the results indicate that the carless households are experiencing significant constraints in their everyday life concerning leisure due to their carlessness, the results also show that these households are more than happy with both their mobility in general, but also their leisure mobility in particular. The results clearly indicates that these households comprehend the many advantages carlessness is associated with. The awareness of these advantages could be seen as constitutive motive for continued carlessness amongst the households. As noted in the results, environmental reasons was one of the primary reasons stated by the interviewees, which motivated them to choose a carless life. These households were aware of the negative environmental consequences excessive car usage has on the environment. Although many stated environmental reasons as one of the primary reasons for choosing not to purchase a car, many other reasons such as cost and time saving reasons as well as health advantages were also stated by the interviewees. However, the results also indicate that these advantages come at a cost, not only in constraints as previously discussed, but also in terms of demanding a more active role as regards to planning before travelling. Each moment in time-space whilst walking, cycling, using public transport or modal chaining such means of mobility, demands more planning and coordination when compared to movement in time space employing cars. This could be seen as an aspect of carlessness that complicates everyday life. A car owner would not have to check the train timetable in advance or call their friends asking for a ride to the party or actively plan and coordinate their children's trip to and from the football practice, they would simply drive there themselves without much thought.

Clearly, the carless households themselves were satisfied with their mobility. Not only did their work commute in general work well without a car and despite significant capacity constraints they were satisfied with the leisure related mobility as well. However, the results show that others took issue with the mobility of the carless and their decisions. This

indicates a mentality with an expectation of car ownership from the population at large. This is further supported by Brown's (2017) conclusion that car usage is the norm. As cars constitute the most common means of mobility in Sweden, an active choice to be carless is in clear defiance of norms. This defiance constitutes another obstacle in the strive to decrease car dependency. In the light of Givoni and Banister's (2013) findings that low-income groups tend to use public transport and bikes to a larger extent than other income groups, and that those modes of mobility decrease in use in favour of cars when income increase, further indicate an expectation to own and use cars. Although it has become increasingly common to use the bike or public transport in work commutes in Sweden, and even though that is not something that is generally frowned upon, the results of this thesis still indicate that carlessness altogether is considered as quite unconventional. Not only does this serve as testimony for the severity of Swedish car dependence, but it also poses a significant obstacle in the strive to decrease car usage and in reaching national goals for sustainability. While issues connected to carlessness such as reaching peripherally located places or attending children's footballs practices are concrete problems, the breakage of norms is much more intangible. Uncoupling the socioeconomic and car usage connection will be vital in future efforts to create a more sustainable transport system. Furthermore, efforts in doing so could foster a more equitable transport system, where your income or gender would not dictate the means of mobility you should use on the basis of norms.

The result of this thesis also raises questions about carlessness as a concept. It was clear that these households more or less concisely had chosen to not own a car. However, and perhaps naturally, they did not define themselves by what they lacked, rather by what they gained. The members of the voluntarily carless households who partook in this thesis are clearly competent and inveterate cyclists and public transport users. However, although some did, they still might not identify themselves as a 'cyclist' for example. As previously mentioned, these households had made their decision regarding the mobility of the household based on a number of different factors, where the environment, economic costs, time savings and health advantages were amongst the most commonly cited factors. Consequently, it might not from a planning perspective be astute to pursue carlessness in and of itself, as it not only has a negative connotation, but it is not the reason in and of itself for individuals to pursue the inherent meaning of the concept, to not own a car. This brings into frame some limitations of the concept of carlessness. This concept might have utility from a research perspective, but from a planning perspective its use is more limited. Instead, promotion of the advantages that carlessness brings might be a more prudent planning approach. However, despite its numerous advantages, carlessness is as shown in this thesis still associated with several constraints as well as being a clear challenge of norms. Consequently, there is clearly a lot of room for improvement.

## **6.4 Room for improvement**

Any change of norms must start with someone breaking them. In this regard, the carless could be considered as pioneers, pathfinders, who can provide an insight into the different benefits and limitations our current society has today as regards to carlessness, both concerning its infrastructure and attitudes. They have stress tested the cycling infrastructure, relied on the public transport system and withstand the scrutiny of friends and colleagues. In this section, the different areas of carless living, in particular concerning leisure mobility, that could be improved will be discussed. Naturally, improvements will also be discussed as regards to their utility to both the currently carless, but also in their ability to change norms regarding mobility in general and in the shift towards a more sustainable transport system as a whole.

### **6.4.1 Cycling infrastructure**

An issue that is made clear in the results is concerning cycling infrastructure. It is clear that the carless sometimes faced issues regarding the cycling infrastructure they had access to in their cities. There was often a lack of dedicated cycling lanes, segregation from other traffic, lack of cycling garages at different destinations as well as some areas lacking cycling infrastructure altogether. However, the results show that the primary issue concerning cycling infrastructure that they faced was connected to limitations in the already existing cycling infrastructure that they had access to. These limitations were primarily connected to issues regarding cycling together with children as well as cargo bike usage. Increased consideration for cargo bikes and children when planning for cycling could be beneficial for not only the carless, but also in persuading others to stop using cars for activities they could otherwise reach using bicycles. It would be very hard to convince someone to park the car and take a cargo bike to go grocery shopping, if they could not find suitable parking at the destination, be oversized at every junction, or as one of the interviewees in this thesis, not even being able to purchase one in the first place as the bike garage in your apartment could not fit one. Likewise, few parents would consider cycling to the beach with their children, if the bike lane would be too narrow and not be segregated from other traffic or constantly having to yield to cars at junctions. Providing cycling infrastructure in our cities is a first and crucial step, but this infrastructure must be improved to meet the demands of more varied use, not only for adults using conventional bikes in their work commute. However, as regards to leisure mobility, cycling infrastructure that is purposely planned to reach some of the more peripherally located leisure related destinations that were hard to reach for the carless could be a clear improvement that could aid in decreasing the capacity constraints carless households have been shown to face. Additionally, more children-friendly cycling infrastructure could also be beneficial for their own independence, as well as contributing to a decrease in coupling constraints for their parents.

#### **6.4.2 Reaching the periphery**

Much effort has been made to create a transport system that efficiently gets people to and from work and that inclines people to park their car when commuting. Considering that work related mobility is the most common trip purpose, development of infrastructure and systems that caters to such needs, both with regards to cycling infrastructure and public transport has been a natural first step in trying to decrease car usage. A logical second step in the same direction would be to specifically start catering for leisure related car free mobility, as it is the second most common trip purpose. One of the primary reasons for the current lack of such infrastructure today is likely that the demand often is too low. It is not especially surprising that there are few bus lines that serve remote lakes or hiking trails, as the demand for them would only be sporadic and at certain times of day, week, and year. This limitation of carlessness, concerning the problems associated with reaching peripherally located leisure related activities could arguably be one of the larger factors that impacts the likelihood of a household choosing to be carless. Many Swedes have a great interest in different outdoor activities, so naturally, the means of mobility they employ needs to suit their needs and enable them to do the different leisure activities they want in their everyday life.

As shown in this thesis, this is one of the limitations and issues with carlessness, the capacity constraints carlessness constitutes drastically limits the physical and spatial range of the household, which in turn complicates mobility to peripherally located places. There are no silver bullets that could single handily overcome this limitation. However, presenting households with a variety of mobility solutions depending on the destination could increase the likelihood that a leisure related activity would be reached without using a private car. A solution that was mentioned by the interviewees who lived in the city of Lund, was the so called 'nature bus'. This was a bus line that was only served during the summer months, that departed from the city centre, taking passengers to different nature areas outside of the city. This allowed the carless an option to reach otherwise inaccessible destinations. Similar bus routes could be established in other cities and be clearly marked and advertised as an option to reach for example nature reserve areas or bathing sites. However, such buses only provide a solution for some of the leisure related mobility needs a household might demand. It would still be hard for children to attend away games with their football team for example. For this more sporadic leisure mobility, where the destination might be varying, other means of mobility are likely more suitable. Increases in cycling infrastructure in more peripherally located places could be one solution, to in a natural way continue to increase existing cycling infrastructure, and thus extending the range of cyclists. Carpool services are likely a more suitable means of mobility for such needs. However, as shown by the results, carpools often did not meet the needs of the carless households who partook in this thesis. Although the small number of interviewees makes it hard to say if this is true for the population at large, it is still an indication that carpool services currently have some limitations. Further development of such services and increases in their car fleet variety

could serve a crucial role in overcoming these particular issues concerning peripherally located leisure related destinations.

#### **6.4.3 Electric cars a threat to carlessness?**

As environmental reasons were one of the primary reasons that dictated the interviewees preferred means of mobility and often constituted a fundamental reason for choosing carlessness, the advent of electric car technology could jeopardise a sustained decrease in car usage. Although outside the scope of this thesis, electric cars arguably have a smaller environmental impact than cars propelled by combustion engines. However, the result of this thesis indicates that this is at least how they were perceived, as more sustainable. As also shown in the results, many of the households were tempted by the idea of owning an electric car. This tendency to accept electric cars as a means of mobility is a clear risk for continued carlessness. Furthermore, it also risks stopping people who are currently considering decreasing their car usage or to become carless, from doing so. It is often hard to change habits, and so if the electric car is presented as a more sustainable alternative to combustion engine propelled cars, it is likely people simply elect to just continue to drive, when electric cars become more affordable, rather than decrease or stop driving altogether. This is of course an arbitrary juxtaposition of events; reality is not as black and white. However, it could still be argued that novel car technologies could sustain the car as the primary means of mobility in our cities, relegating efforts to improve other means of mobility to a lower priority. Despite potential decreases in emissions, this could of course risk missing the many other negative impacts excessive car usage has on perhaps primarily cities, as all issues associated with car usage are not connected to environmental aspects. To counteract such an eventuality, it is important from a planning perspective to carefully monitor developments regarding this issue, as market forces are sure to take the reins thus dictating our future mobility. If electric cars are allowed to unequivocally replace internal combustion engines and become branded as sustainable without presenting people with functional and credible alternative means of mobility, our cities risk becoming condemned to even more decades of car dependency.

## **7. Conclusions**

The coming decade will show if the voluntary carless studied in this thesis are indeed the early norm breakers, who in turn become norm makers. This thesis has examined the voluntary carless, specifically focusing on their leisure mobility. Lifestyle choices and active planning have allowed the households good access to services and their workplace, as well as to a large degree leisure related activities. The voluntarily carless can be seen to be motivated by several different advantages associated with carlessness, such as more environmentally friendly living and cost savings. However, and in line with time-geographic theory, the narrower width of the daily prism that carless living constitutes, created several capacity constraints that hampered primarily their leisure related mobility. The inability to

reach many peripherally located leisure related destinations, such as social events or outdoor activities is found to be a major issue of carlessness. Although the voluntary carless found ways to handle such issues, this limitation still will be a large disincentive for other people to become carless and in turn decreasing car usage. Furthermore, the thesis also has discussed that being voluntarily carless is not some unambiguous state of mind or condition, but rather a consequence of geographical preconditions, personal motives and lifestyle choices. The thesis has identified several preconditions that both motivates people to not purchase a car and that eases carless living. Additionally, the thesis has found and discussed some of the negative aspects of carless living, finding that many of them are related to leisure related mobility.

Moving forward, the issues connected to carlessness, specifically concerning leisure related mobility needs to be addressed if more people are to decrease their leisure related car use or indeed become carless themselves. The preconditions as regards to physical infrastructure and transport systems are fundamental for such a change and their limitations would need to be addressed in order to facilitate a sustained decrease in car usage. It is not realistic to imagine that more people would choose to become carless merely based on personal morals and beliefs - if it would entail not being able to continue with their hobbies or visit their friends. Instead of waiting for more people to sell their cars, a more active approach to planning is needed to foster viable options to the car, specifically for leisure related activities. In the spirit of 'if we build it, they will come', an active approach to planning for leisure related activities taking into account induced demand for mobility could be employed. Such an approach could create the necessary preconditions for a decrease in leisure related car use.

## 8. Further research

Naturally, the results and discussion presented in this thesis spawn new questions and leaves some areas unexplored. As this thesis has had a clear non-rural and Swedish perspective, results might have varied if the thesis was carried out in other geographical contexts, either on a different scale or country. Mobility habits and the conditions for mobility varies depending on geographical location, and as such, future studies might find other themes in other places.

Further studies could also be carried out regarding the future of urban mobility as regards to the advent of electric cars. How can the electrification of the Swedish car fleet benefit the strive towards a more sustainable transport system, while still avoiding the change to constitute the end of development for alternative means of mobility, i.e., walking, cycling and public transport? Such studies could focus on how to implement novel car technologies in ways that does not demand private car ownership.

This study has focused on those who are voluntarily carless. As previously mentioned, a majority of those who do not own cars dose so due to economic reasons. Consequently, further studies could depart from similar research questions, using similar methodology, while instead focusing on those who are carless due to constraints. Knowledge about issues regarding leisure mobility for this group could potentially identity other issues not identified in this thesis.

The discussion in this thesis regarding norms and car usage, raises important questions regarding equitable transport systems in our cities as well as to whom the system caters. Additional studies could focus on how a strive towards a transport system built for the carless could increase equality in access to mobility regardless of income or gender.

## 10. References and sources

### 10.1 Printed publications

- Bryman, A. (2016) *Social Research Methods*. Oxford: Oxford university press.
- Castree, N., Kitchin, R. & Rogers, A. (2013). *A Dictionary of Human Geography*. Oxford: Oxford University Press.
- Dalen, M. (2015) *Intervju som metod*. Oslo: Universitetsforlaget
- Ellegård, K. (2019) *Thinking Time Geography, Concepts, Methods and Applications*. London: Routledge.
- Esaiasson, P., Gilljam, M., Oscarsson, H., Towns, A. & Wängnerud, L. (2017). *Metodpraktikan: Konsten att studera samhälle, individ och marknad*. Stockholm: Wolters Kluwer
- Flick, U. (2017) *An introduction to qualitative research*. London: Sage Publications Ltd.
- Frändberg, L., Thulin, E. & Vilhelmson, B. (2005) *Rörlighetens omvandling: Om resor och virtuell kommunikation-mönster, drivkrafter, gränser*. Lund: Studentlitteratur AB
- Givoni, M. & Banister, D. (2013) *Moving Towards Low Carbon Mobility*. Cheltenham: Edward Elgar Publishing Ltd.
- Hjerm, M., Lindgren, S. & Nilsson, M. (2014) *Introduktion till samhällsvetenskaplig analys*. Malmö: Gleerups Utbildning AB
- Ortúzar, J. & Willumsen, L. (2011) *Modelling Transport*. Chichester: Wiley Ltd.
- Thorstein, V. (1953, Republished 1997) *The Theory of the Leisure Class*. Denver: Net Library Inc.

### 10.2 Publications

- Aloi, A., Alonso, B., Benavente, J., Cordera, R., Echániz, E., González, F., Ladisa, C., Lezama-Romanelli, R., López-Parra, Á., Mazzei, V., Perrucci, L., Prieto-Quintana, D., Rodríguez, A. & Sañudo. (2020) Effects of the COVID-19 Lockdown on Urban mobility: Empirical Evidence from the City of Santander (Spain). *Sustainability*. 12(9) 3870 <https://doi.org/10.3390/su12093870>
- Beck, M. & Hensher, D. (2020) Insights into the impact of COVID-19 on household travel and activities in Australia - The early days under restrictions. *Elsevier, Transport Policy*. 96(2020) 76-93 <https://doi.org/10.1016/j.tranpol.2020.07.001>
- Braun, V. & Clarke, V. (2006) Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2) 77-101 DOI: [10.1191/1478088706qp063oa](https://doi.org/10.1191/1478088706qp063oa)
- Brown, A. (2017) Car-less or car-free? Socioeconomic and mobility differences among zero-car households. *Elsevier, Transport Policy*, 60(2017) 152-159 <https://doi.org/10.1016/j.tranpol.2017.09.016>
- Currie, G. & Sendbergs, Z. (2007) Exploring forced car ownership in metropolitan Melbourne. *Australians Transport Research Forum 2007*. <https://research.monash.edu/en/publications/exploring-forced-car-ownership-in-metropolitan-melbourne>
- de Haas, M., Faber, R. & Hamersam, M. (2020) How COVID-19 and the Dutch 'intelligent lockdown' changes activities, work and travel behaviour: Evidence from longitudinal data in the Netherlands. *Elsevier, Transportation Research Interdisciplinary Perspectives*, 6(2020) 100150 <http://dx.doi.org/10.1016/j.trip.2020.100150> 2590-1982

- de Vos, J. & Witlox, F. (2013) Transportation policy as spatial planning tool; reducing urban sprawl by increasing travel costs and clustering infrastructure and public transportation. *Elsevier, Journal of Transport Geography*, 33(2013) 117-125 <https://doi.org/10.1016/j.jtrangeo.2013.09.014>
- Gil Solá, A. (2013) På väg mot jämställda arbetsresor vardagens mobilitet i förändring och förhandling. [Doctoral thesis, University of Gothenburg] *Gothenburg, University of Gothenburg. Ser. B 123. Web.* ISBN [91-86472-71-2](https://doi.org/10.1016/j.jtrangeo.2013.09.014)
- Hägerstrand, T. (1970) What about people in Regional Science? *Papers of the Regional Science Association* 24(1970), 6-21 <https://doi.org/10.1007/BF01936872>
- Hallberg, J., Årman, T. & Eckerman, I. (2004) Bilismens avigsidor är minskad fysisk aktivitet och negativ påverkan på hälsan. *Läkartidningen*, 101(5), 402-404 ISSN: 0023-7205
- Hull, K. (2018) Do we need the car? A qualitative study on the disposal of bulky waste in carless households in Gothenburg. [Bachelor's thesis, University of Gothenburg] *Gothenburg University Publications Electronic Archive.* <https://gupea.ub.gu.se/handle/2077/56801>
- Klein, N. & Smart, M. (2017) Car today, gone tomorrow: The ephemeral car in low-income, immigrant and minority families. *Springer Science, Transportation*, 44(3) 495-510 DOI: 10.1007/s11116-015-9664-4
- König, A. & Dressler A. (2021) A mixed-methods analysis of mobility behaviour changes in the COVID-19 era in a rural case study. *Springer, European Transport Research Review*, 13(15) <https://doi.org/10.1186/s12544-021-00472-8>
- Lagrell, E. & Gil Solá, A. (2021) Car use of the Carless in Sweden: Everyday Life Conditions for Reducing Car Dependence. *Sustainability*, 13(2021) 10250 <https://doi.org/10.3390/su131810250>
- Lagrell, E. Thulin, E. & Vilhelmsen, B. (2018) Accessibility strategies beyond the private car: A study of voluntarily carless families with young children in Gothenburg. *Elsevier, Journal of Transport geography*. 72(2018) 218-227 <https://doi.org/10.1016/j.jtrangeo.2018.09.002>
- Loa, P., Hossain, S., Mashrur, S., Liu, Y., Wang, K., Ong, F. & Nurul Habib, K. (2021) Exploring the impacts of the COVID-19 pandemic on modality profiles for non-mandatory trips in the greater Toronto Area. *Elsevier, Transport Policy*, 110(2021) 71-85 <https://doi.org/10.1016/j.tranpol.2021.05.028>
- Lowe, A., Norris, A., Farris, J. & Babbage, D. (2018) Quantifying thematic saturation in qualitative data analysis. *Sage Journals*, 30(3). 191-207 <https://doi-org.ezproxy.ub.gu.se/10.1177/1525822X17749386>
- McIntosh, J., Roman, T., Kenworthy, J. & Newman, P. (2014) The role of urban form and transit in city car dependence: Analysis of 26 global cities from 1960 to 2000. *Elsevier, Transportation Research Part D: Transport and Environment*. 33(2014) 95-110. <https://doi.org/10.1016/j.trd.2014.08.013>
- McLaren, A. (2016) Families and transportation: Moving towards multimodality and altermobility? *Elsevier, Journal of transport Geography*, 51(2016) 218-225 <https://doi.org/10.1016/j.jtrangeo.2016.01.006>
- Mitra, S. & Saphores, J-M. (2020) How do they get by without cars? An analysis of travel characteristics of carless households in California. *Springer Science, Transportation*, 47(2020) 2837-2858 <https://doi.org/10.1007/s11116-019-09994-6>
- Mitra, S. K. (2016) Land use, land value and transportation: Essays on accessibility, carless households and long-distance travel. [Doctoral thesis, University of California] *Ann Arbor, Pro Quest Dissertation & Theses Global.* ISBN: [1369226942](https://doi.org/10.1016/j.jtrangeo.2016.01.006)

Nascimento, L. & Steinbruch, F. (2019) "The interviews were transcribed", but how? Reflections on management research. *RAUPS Management Journal*, 54(4), 413-429. <https://doi.org/10.1108/RAUSP-05-2019-0092>

Paggi, M., Jopp, D. & Hertzog, C. (2016) The importance of Leisure Activities in the Relationship between Physical health and Well-Being in a Life Span Sample. *Gerontology, Behavioural Science Section*. 62(2016) 450-458 [DOI: 10.1159/000444415](https://doi.org/10.1159/000444415)

Pant, P. & Harrison, R. (2013) Estimation of the contribution of road traffic emissions to particulate matter concentrations from field measurements: A review. *Elsevier, Atmospheric Environment*, 77(2013) 78-97 <https://doi.org/10.1016/j.atmosenv.2013.04.028>

Šinko, S., Prah, K. & Kramberger, T. (2020) Spatial Modelling of Modal Shift Due to COVID-19. *Sustainability*. 13(13) 7116 <https://doi.org/10.3390/su13137116>

Smith, W. (2008) Dose Gender influence Online Survey Participation?: A Record-linkage Analysis of University Faculty Online Survey Response Behaviour. *San José State University*. <https://files.eric.ed.gov/fulltext/ED501717.pdf>

Strömblad, E., Winslott Hiselius, L., Smidfelt Rosqvist, L. & Svensson, H. (2021) Adaptive Travel Behaviours to Cope with COVID-19: A Swedish Qualitative Study Focusing on Everyday Leisure Trips. *Sustainability*, 13(2021) 12979 <https://doi.org/10.3390/su132312979>

Varsaluoma, J. & Väänänen, K. (2019) Understanding the Digital and Non-digital Participation by the Gaming Youth. *Human-Computer Interaction - Interact* 11747(2019) 453-471 [ISSN: 0302-9743](https://doi.org/10.1080/10447315.2019.1644444)

Witten, K., Huakau, J. & Suzanne, M. (2011) Social and recreational travel: The destinations, travel modes and CO2 emissions of New Zealand households. *Social policy journal of New Zealand*, 37(2011) 172-184. [ISSN: 1172-4382](https://doi.org/10.1080/03014217.2011.614444)

### 10.3 Internet source

Naturvårdsverket (2020) *Fördjupad analys av den svenska klimatomställningen 2020*. <https://www.naturvardsverket.se/om-oss/publikationer/6900/fordjupad-analys-av-den-svenska-klimatomstallningen-2020/> [Retrieved: 2022-03-15]

Trafikanalys (2021) *Resvanor, Nationella resvaneundersökningen, RVU Sverige*. <https://www.trafa.se/kommunikationsvanor/RVU-Sverige/> [Retrieved: 2022-04-05]

Transportstyrelsen (2022) *Fordonsstatistik*. <https://www.transportstyrelsen.se/sv/vagtrafik/statistik/Fordonsstatistik/> [Retrieved: 2022-04-01]

## 10. Appendices

### Appendix 1 – Interview guide

#### *Del 1: Inledning*

*-Berätta om uppsatsen, be om tillåtelse att spela in. Berätta om anonymitet - ingen kommer att figurera med namn eller andra identifierande attribut i studien.*

Inledande frågor:

Samla information om respondentens bostadsort (samt centralt/perifert?), tillgång till service, ålder, hushållsstorlek, körkortsinnehav, biltillgång och medlemskap i bilpool.

#### **Guide**

*-Fokus på att få reflekterande svar från respondenten-*

#### *Del 2: Varför hushållet inte äger någon bil?*

Samla kunskap om hur det kommer sig att hushållet inte äger någon bil. Har det varit ett aktivt val eller ej? Avvägningar – viktiga aspekter – fördelar och nackdelar: undvik explicita frågor, låt intervjupersonen reflektera.

Hur upplever hushållet situationen som bilfritt hushåll? Är dom nöjda? – Om långsamt: Upplever hushållet några särskilda problem som en konsekvens av att inte äga bil och hur överkommer man i så fall dessa problem?

Vilka färdmedel använder hushållet i stället för bil? Vad är fördelarna med det valda färdmedlet? Hur fungerar färdmedlet kopplat till fritids relaterade resor? Använder hushållet andra färdmedel på fritiden än vad man gör i arbetsrelaterade resor? Varierar valet av färdmedel beroende på årstid?

Frågor ang. hushållets eventuella bilanvändning. Lånar hushållet bil och i så fall i vilka syften?

#### *Del 3: Fritidsresor*

- Definiera fritidsresor för intervjupersonen och vilka typer av aktiviteter och resor som de innebär kopplat till den här studien-

Upprätta i vilka syften intervjupersonen och hans hushåll reser i fritidssyfte, vilka destinationer och aktiviteter?

Finns det någon särskild fritidsaktivitet som är extra jobbig eller problematisk att ta sig till? Kan det i så fall vara årstids baserat? Väck uppmärksamhet för fritidsaktiviteter under andra årstider.

Hur fungerar det att resa till mer oplanerade och spontana fritidsrelaterade aktiviteter?

#### *Del 4: Avslutande generella reflektionsfrågor*

Finns det någonting som hade kunnat förändra situationen – bilägare i framtiden? Varför eller varför inte – identifiera viktiga faktorer.

Om bilägare i framtiden: vad hade kunnat förändra det i så fall?

Låt intervjupersonen reflektera över åtgärder eller förbättringar i hans stad/kommun/land eller på samhällsnivå som hade underlättat för deras situation som hushåll utan bil? – Vad saknar de, något de sett i någon annan stad/land. Om långsamt: återkoppla till intervjupersonens tidigare svar på ex. val av färdmedel. Om lösningar på redan diskuterade problem uppkommer: fråga om ytterligare lösningar på problem.

#### *Del 5: Avslut*

Tacka intervjupersonen – svara på eventuella frågor – intervjupersonen kan få arbetet skickat till sig när det är klart.

## Appendix 2 - E-mail for interview participation

Hejsan!

Du har i inledningen av projektet Vardagsresor svarat att du kan tänka dig att delta i kompletterande studier, därav detta mail.

Mitt namn är Anton Florén och jag genomför just nu mitt examensarbete på Göteborgs universitet tillsammans med Trivector Traffic, där jag undersöker fritidsresvanor hos hushåll som inte äger bil.

Kunskap om hur hushållen reser på fritiden är viktig i omställningen mot ett hållbart transportsystem.

Eftersom du har uppgett att ditt hushåll inte äger någon bil, undrar jag därför om jag skulle kunna få intervjua dig om dina fritidsresor. Intervjun tar max 30 minuter och kommer att ske via videolänk (Zoom eller Teams) eller via telefon om du tycker det passar bättre.

Jag har möjlighet att genomföra intervjun såväl dagtid som kvällstid. Ingen obehörig kommer att kunna ta del av dina svar och du kommer att vara anonym i studien.

Om du kan tänka dig att var med, svara i så fall på detta mejl och bifoga ditt telefonnummer så kontaktar jag dig inom kort för att boka in en tid för intervjun. Om du hellre vill bli kontaktad via mejl så går det också bra.

Din medverkan skulle vara mycket värdefull!

Med vänliga hälsningar

Anton Florén Göransson

Mail: [anton.floren@trivector.se](mailto:anton.floren@trivector.se)