We are not idealists

A qualitative case study on the role of residents' climate change concerns in rural mobility practices

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Abstract

Citizens concerned about climate change could represent a potential for changes in everyday travel behaviour in a less carbon intensive way, or even put public pressure on governmental decisions to mitigate climate change emissions from the transport sector. Situated in the context of rural residents' everyday life in Denmark, this study explores how the role of climate change concerns within residents' everyday travel practices might be understood. The study draws upon 6 in-depth interviews with residents living in two rural villages in Northern Denmark. The findings highlight a concern among the residents that does not translate significantly into changed travel behaviour. I draw on the work of Kari Marie Norgaard to explain how the residents' arguments for this represent cultural tools available to them and provide legitimising strategies for their behaviour. Combined with a social practice analysis of the most present mobility practices (car driving, public transport, and cycling), the study concludes that the role of climate change concerns in the everyday mobility practices has several aspects. These can have negative, positive or neutral impacts on the actual mobility practices, such as a strengthened identity marker on utility cycling that framed the practice as unattainable, or a positively reinforcing role in sustaining low carbon practices. The study also proposes potentially positive roles for concerns, and subsequently points to the need for more knowledge on preconditions to low carbon mobility practices in rural areas, and social scientific understanding of the tensions between travel behaviour as either a private or political issue.

Keywords: mitigation – everyday mobility – climate change concerns – rural – Norgaard – social practice theory – Denmark

Contents

1 Introduction

1.1 The urgent context of the problem

Across global-local scales the need for planetary awareness and stewardship in every societal aspect is urgent, in order to decrease the risk of what has been called a 'Hothouse Earth pathway' (Steffen *et al.* 2018). A cornerstone of this problem is the societal aspect that this study engages in: greenhouse gas (GHG) mitigation within personal transport.

Mitigation within the transport sector is recognised as a particularly difficult task that might be the most difficult area to transform into a low-carbon sector (Sims *et al.* 2014: 604; Popper 2012: 60). This goes to show in the GHG emissions from the sector: while the emissions are targeted by the EU to decrease by at least 60 % by "mid-century" (from 1990 levels) and be *"firmly on path towards zero"* in order to align with the Paris Agreement (European Commision 2018: 32), the transport sector is projected to become the largest source of CO_2 emissions from 2020 onwards (European Commission 2018: 49) and GHG emissions from the transport sector in the EU continue to rise (EEA 2019; 2018).

Transitions to low carbon mobility require both changes in social norms to imply less travel, a different economic growth model that is decoupled from transport, and/or to switch to a different transport system (Givoni & Banister 2013: 9). Consumer choices are a precondition for technological change to happen, and both incentives and improvements of the convenience and availability of low or zero carbon mobility modes are required, as well as mobility-as-a-service solutions that improve public transport and sharing of vehicles (European Commission 2018: 110). Travel is, along with housing and food consumption, the cluster of household consumption activities that has the largest effect on GHG emissions (Spangenberg & Lorek 2002). GHG mitigation within personal transport is thus an important environmental, scientific, and societal challenge.

1.2 Thesis rationale

The issue of behavioural change is regarded as a necessary means to reducing GHG emissions from the transport sector (Anable *et al*. 2012; Banister 2008; Schwanen *et al.* 2012). But how can travel behaviour be conceptualised in a way that captures the relevant factors of such a decision – as well as the potential keys to changing this behaviour? Modelling this requires inclusion of very different factors such as motivations and values, contextual factors, social influences, personal capabilities, as well as habits (Jackson 2005). The specific problem this thesis seeks to investigate is that there seems to be a gap between environmental concerns about of citizens, and their actual actions in terms of mobility behaviour (Kollmuss & Agyeman 2002). Now the expectation that there should be a direct causality between environmental concern and mobility actions might seem naive when the embeddedness of mobility into everyday life is taken into account. Nonetheless it needs to be addressed, both because of potential reductions of emissions from individuals' travel behaviour, and because they play a role in creating public pressure on governments to make necessary interventions (Sims *et al.* 2014: 647). In this study, I am interested in the rural point of view. While the literature is wide ranging and cross disciplinary on this topic, it was rather difficult to find studies occupied with rurally located people's mobility options in countries with high-carbon economies, compared to how much emphasis there is on urban locations, just as most of the literature on sustainable mobility solutions focuses on urban contexts. In this study, a small number of citizens located in rural villages in Denmark provide the empirical data.

In a recent poll conducted on behalf of the Danish Ministry of Energy, Utility and Climate, Danes were asked about the agreeability of the statement *"there is no need for the individual Dane to change behaviour in order to solve the climate challenge, that will be solved by the technological development in the future"*; 64% disagreed or strongly disagreed (only 12% agreed or strongly agreed, while 24% answered neither/nor) (Norstat 2019; Efkr 2019). In the same poll, 63% answered that they would not be willing to sell their car and use public transport or cycle, in order to reduce CO_2 emissions (17% answered that they would and 19% did not own a car) (Norstat 2019). While the validity and representativeness of such a poll can always be called into question, it does hint at rather large climate change awareness and recognition among the population that behavioural changes are a part of the solution. It also hints at a lesser degree of willingness to replace the car. In a survey by the European Commission, 56% of respondents expected the biggest changes in their daily lives to be related to mobility (European Commission 2018: 295). The seeming incoherence in acknowledging the need for mitigating behavioural changes, while at the same time not changing mobility behaviour, is important to understand before it can be changed.

Understanding this incoherence or connection is the aim of the present study, the necessity of which is further underpinned by the following three arguments:

1) Because of the absurdly immense proportions of climate change and what it implicates on modern lifestyles and livelihoods, the emotional struggles this imposes on us create socially structured obstacles for the topic (climate change) to being adequately dealt with and paid attention to (Norgaard 2011). This leads to what Stanley Cohen calls *implicatory denial*, meaning that information deficit on climate change is not the problem, but acting on it is, and implicatory thus means the absence of *"the psychological, political or moral implications that conventionally follow"* (Cohen 2001: 8). A deeper understanding of the relationships within society that structure this climate changing behaviour is therefore critical (Norgaard 2018). Sociological explanations are important when we want to understand why there is no mass mobilization or boycott of cars. The problem with this argument, on the other hand, is that it fails to consider how embedded personal mobility is in a wide range of everyday life activities, and how they are disproportionately dependent on car driving, either because of the location or of the capacities of the individual.

2) What makes the transport sector particularly difficult to address is that transport plays an integral role to our lives and thus the consequences are wide ranging when transport is changed, whether decreased, erased or just not as easy anymore. Within research, this has led to a focus on transport as an accessibility function (Lucas 2004). Accessibility, to some degree, is a necessity for societies to function, but it is also a function for individuals' well-being and life opportunities. A decrease in accessibility can both be a function of individuals' capabilities, and of external factors (e.g. Sen 2000; Nussbaum 2013; Lucas 2004), but it leads to a social exclusion of the citizens being affected, which makes it an issue of social and economic equality (Lucas 2004; Macionis & Plummer 2002: 241). The most topical example of such a perspective might be the Yellow Vests protests in France (Poirier 2018; Gross 2018). Although not central to this study, the Yellow Vests movement indicates that climate policy measures need to acknowledge and address declining living standards of the most vulnerable parts of the population in order to be feasible (Dolsak & Prakash 2018). This indicates that the perspectives of citizens located in the rural periphery in Denmark are relevant to illuminate, in order to understand the barriers and enablers to creating low carbon mobility solutions in areas with high car dependency.

3) The third argument for this study is more of a methodological matter. The thesis is that travel behaviour and transport mode choices, although being decisions made by individuals, should not be studied only as acts of an individual, or tried to be changed only with attention to individuals' own responsibility. From the preceding two arguments, this should already be clear, given that the issues that this study takes on are not individual factors, but rather integral to social life. In order to be able to draw attention to the issues that the preceding two

arguments state that this study should do, I use the social practice theory argued by Shove, Pantzar and Watson (Shove *et al.* 2012). This provides a break away from the traditional structure-agency dichotomy of social sciences and enables an emphasis on the relevant parts of mobility practices beyond the user of transport to be targeted (Røpke 2009; Schwanen *et al.* 2012; Watson 2012).

Against this background, this study tracks the role of climate change concerns of residents living in rural areas, in their mobility practices. I make the pragmatic argument that even though socio-psychological approaches (that emphasise values and attitudes as the change driver for travel behaviour) have not yet had significant effect (Spotswood *et al*. 2015; Schwanen *et al.* 2012), it seems important to take the climate change concerns of citizens into consideration. This study therefore pursues a conceptual and investigative exploration of how this might fit with a social practice approach.

The next section further addresses the purposes with the study and presents the research questions, prior to section 3, that outlines the concept of climate change concerns as it is put to use here, and introduces what social practice theory is.

2 Purpose of study

This thesis investigates how climate change concerns of citizens in a rural area are linked to their mobility practices in everyday life. The general purpose of this study is two-fold:

1) By contextualising individuals' subjective climate change concerns into the mobility practices of the individuals, this study aims at a more nuanced comprehension of the value-action gap and to open this topic to new lines of investigation.
2) By zooming into rural residents' actual mobility practices and which problems in relation to a low carbon mobility transition they identify, this study can add to the understanding of human processes of acting in a world where the climate is changing.

The charting of these issues rests on rural residents' subjective perceptions, as it is the connection between their climate change concerns and their perceived mobility options that is the centre of this study. The analysis of the interview results will take a social practice approach as formulated by Elizabeth Shove *et al.* (2012) that can elevate the findings to a structurally broader level, and in order to analyse the climate change concerns, the conceptual framework of Kari Marie Norgaard is used to formulate the findings as strategies of action.

This leads to the following research questions:

2.1 Research Questions

The main question for this study is:

> *What is the role of climate change concerns in mobility practices in rural areas?*

In order to answer this, the following two sub-questions were developed:

> Sub-question 1: *Within a rural context, which elements and linkages are perceived as constituents of everyday mobility practices?*

Sub-question 2: *Which strategies of action are used when people located in rural areas reflect on climate change and their own mobility practices?*

After those two, the main question can be answered.

2.2 Delimitations

The study is limited to everyday mobilities, which means that emphasis has been on short or medium travel distances, even though some of the people interviewed leisurely travelled long distances at times. Though long-distance travel is the most increasing type of travel (Banister & Givoni 2013), the impact of short or medium travel distances are nevertheless significant, and a hypothesis of this study is that these types of travel are the most important in terms of accessibility.

3 Theoretical points of departure

This section clarifies the concepts that the research questions and analysis build on. The first section is a brief presentation of how the concept of climate change concerns is defined here, which mainly rests on Norgaard's theoretical framework. The second section introduces the theory of social practice.

3.1 Conditions of climate change concerns

Climate change concern is the variable that is traced in rural mobility practices in this study. I call it climate change concerns here, because as I argue in the analysis, the residents interviewed were concerned about climate change. I take concern here to mean they are aware of climate change and to some degree have scientific knowledge about what the problem is. While the conceptualisation is based on Norgaard's work on the social processes of implicatory climate change denial, a more nuanced introduction to what the residents said is found in the analysis.

Norgaard (2011) examines the social processes of such a concern and is therefore the enabler in the analysis used to explain the interviews. In her analysis of rural Norwegian culture, Norgaard e.g. included how conversation norms shape the scope of what is acceptable to take up in conversation in different spheres (Norgaard 2011: 98). The function of not having conversations about climate change (whether it be in political debates, at social gatherings or within families) is *"to hold 'normal' reality in place"* (Norgaard: 70). The conversational norms are a part of the general norms of attention that work as a way for individuals to manage the concomitant emotions and moral dilemmas that climate change brings.

While Norgaard's work is multifaceted, I only highlight here that a strong focus is on how culture enables individuals to act and make their strategies for their actions. As part of her extensive theoretical framework, Norgaard uses the concept of culture as a toolkit proposed by Ann Swidler (Swidler 1986). Culture is here understood to contain tools that are distributed in different chunks to different individuals. This conceptualisation provides an understanding of how culture can cause action, because it provides the tools for individuals' strategies of

action (Swidler 1986). Building on Norgaard's work on climate change concerns, the second research question of this study uses the phrasing of 'strategies of action' in this swidlerian sense. Norgaard argues that the residents in her study had strategies of action that could be grouped together into either *tools of order* or *tools of innocence*, and the analysis is structured around these two kinds of tools.

3.2 Social practice theory

The main ambition with the undertaking of social practice theory is to understand change in society, by understanding how practices *"emerge, persist, shift and disappear*" (Shove *et al.* 2012: 8). While social practice is rather a polysemic concept, this study uses the categorisations made by Shove *et al.*, where practices are made from elements that are grouped as *materials*, *competences* and *meanings* (2012). Materials include physical aspects, including technologies and infrastructures; competences are multiple forms of understanding that enable the practices to be undertaken; and meanings are the symbolic ideas and values that are attributed to the practices. When elements of these types are linked in new ways, this is what changes a practice.

Practices account for both practices-as-entity (the identifiable thing such as cycling) and practices-as-performance (the actual doing of the practice). Practices exist through performances and can be viewed in terms of patterns and reproductions, but are determined by the configuration of the elements. The notion of practices as performances leaves the individuals to the role of practice carriers, and their relation to the practice can be analysed in terms of their understandings, know-how, meanings, and purposes with the practice. This is important, because it allows for an analysis that addresses the complexities of mobility practices and integrates infrastructural considerations with individuals' actions and motives.

Another relevant characteristic is that practices compete with other practices for recruitment of carriers (Shove *et al.* 2012: 87). Because of this, it is interesting to study competing mobility practices, as is done in this study.

Within the sociological discipline, social practice theory draws on the structuration theory of Giddens, because it is not the *"experience of the individual actor, nor the existence of any form of societal totality"* (Giddens 1984: 2), which is studied. One of the main critiques of social practice theory is that it neglects the role of individual subjectivity and reflections in everyday life, because of its focus on collective meanings (Doody 2015: 51). While there are many other criticisms (see Doody 2015: 50-51 for an overview), at least this aspect might be less critical in this study, as the purpose of the study allows for sensitivity to individual agency.

This leaves the study with a chain of concepts from varied theoretical contexts. While such an approach might seem fuzzy, the aim is to be able to include the totality of this problem constellation, so the linkages become visible. As Shove expresses it: *"The challenge is to handle the many tracks of enquiry that spin out from this approach"* (Shove 2010b). In this study, the mobility practices of the residents are analysed using the concepts from social practice theory, but given the purpose of the study and the additional part of the analysis being the strategies of action of the residents, the practices are studied in order to situate and characterise the roles that climate change concerns have.

4 Research methods

4.1 Methodology

This study focuses on a case study of a community in rural Denmark and takes into account the prevalent transport modes of its inhabitants. With the help of theory and existing research, more general conclusions can be drawn from this case.

The problem investigated, the problem of integrating climate change as a topic into everyday life, emerged as a result between having read and been inspired by Norgaard's book, and taking an internship in sustainable mobility solutions in rural areas. As this study is not concerned with testing theory, the social practice approach is instrumental in so far that this study does not evaluate the theory in theoretical terms or provide an extensive review or conceptualisation of it. The social practice theory was chosen after an intensive literature review and was found to be both suitable to this study, and easy to operationalise. The design of the study is therefore neither deductive, nor inductive, but has been a rather iterative process (Bryman 2008: 12).

As it is probably clear by now, this study takes a qualitative point of orientation, with its data material being in-depth semi-structured interviews from an instrumental case. Through the lens of a case study the aim is to enable the contextual complexities of the issue to become visible (Flyvbjerg 2006). The analysis of the interviews is based on social practice theory, Norgaard's theory and empirical studies that were found relevant from the review of literature.

My claim to knowledge in this study takes its theoretical justification in critical realism (Bhaskar 1998; Bryman 2008: 14). I take this here to mean that societies are relationally structured and irreducible to individuals, whose agency in turn can be examined in terms of socially conditioned reasons (Collier 1994: 161). Critical realism combines realist ontology with an interpretive epistemology. Instead of describing an actual event, the generative mechanisms causing it are investigated, which implies that the knowledge created is fallible and may be debated. This is due to the complexity of sustainability problems in real-world open systems (Bhaskar 2010).

4.2 Data gathering processes

The following describes the processes and choices regarding the data gathered. First the process of selecting a case is presented, as well as how the sample should be viewed. Then I introduce the structure of the semi-structured interviews, choices made about the interviews, and how the transcripts were coded and analysed.

4.2.1 Case selection

This is an instrumental case study in the sense that it is chosen in order to provide insights about more general phenomena (Kvale & Brinkmann 2015: 333). In order to study the elements of mobility practices and individuals' climate change concerns, six semi-structured interviews by a fitted interview guide were conducted with seven respondents living in two small villages in the rural east side of Hjørring municipality, Denmark. Prior to this, another case location was visited and approached as described below.

There are two main arguments for this case. 1) It is an example of the allegedly understudied high carbon rural periphery parts of society. 2) My hypothesis for this study is that if climate change concerns play a role in mobility practices, then it will be a more decisive role in a rural periphery case, because the infrastructural and social conditions invite high carbon mobility, e.g. the low frequency of public transportation and high car dependency. This enables me to investigate a verification hypothesis given that the case exemplifies a least likely scenario for climate change concerns to play a role that affects mobility practices. If concerns play a role here, they will surely play a role in other contexts with better preconditions to take up low carbon mobility practices (Flyvbjerg 2006).

4.2.2 Trials and errors of gaining entreé

As mentioned above, two cases were initially chosen, the first being a small rural village in Lolland Municipality, where I contacted the chair holder of the civic association of the town. I was invited to present my study project at the general

assembly of the civic association, but no one expressed interest in being interviewed for my project or contacted me afterwards.

My own suggestion for the failure of recruitments was that my presentation of the research purpose was unclear. This was a caution prior to the presentation, because the idea to partially study personal mobility practice as well as the practioners' reflections on climate change might seem very contra intuitive – in a sense, what the interviews aim at is to both reflect the interviewee's descriptive (factual) and normative (opinionated) aspects of the issue. It might also have led people to misunderstand who the study was targeted at, in the sense that the aim was not to include only participants who want or need to change their transport use or mode. When asking one of the attendants, if she would consider taking part in the interview, the answer was no, because she had a car and therefore no interest in other transport modes (author's rephrasing from field note). As I was insecure about crossing boundaries during the recruitment of participants for ethical reasons, I did not continue the conversation with her, but it hinted at a major communication problem. This led to the following methodological choices.

As described in above section, the case selection and recruitment of participants involved difficulties, which led to a change in the data collection and sampling strategy. With this next case, I contacted an old high school friend's mother who lived in a rural village in the municipality of Hjørring and asked if she would like to participate. She accepted and later provided me with contact information on other participants who lived nearby, and later on some of them provided me with further contacts. So, it ended up being a snowball sample. This also means that the case investigated is in the same municipality that the author grew up in. Although I grew up in the largest city of the municipality, Hjørring, a city of approximately 25,000 citizens, and did not have much to do with this part of the municipality where the rural villages are located, my background provides an understanding of the region and of Hjørring (where half of the interviewees were employed), but also runs risks of being biased and inability to see what I might perceive as common knowledge.

4.2.3 Sample

Characteristics of the 7 residents interviewed are presented in table 1. Due to time constraints of the study and travel constraints of the author, as well as the slow process of recruitment of participants, this study is based on a snowballing convenience sample. I would argue, however, that it has purposive parts, such as they lived in a specific rural area, represented a range of different demographic characteristics like age, gender, educational level, and to a lesser degree a variety of transport modes. After the interviews I specifically asked the interviewees if they knew someone who might be interested and who had a different transport

need, gender, age, occupation, lifestyle or thoughts on sustainability than the interviewee.

Table 1 Sample Information

The table shows characteristics of the participants who were interviewed. Magnus is unemployed apart from a temping job (3 km's away) and is driving leisurely (23 km) most days.

Pseudonym	Age	Gender	Primary transport	Education level	Km to work	Km to train station
Lone	54	F	Car	University	Varies	2
Jacob	20	M	Car and train	High school (university planned)	Varies	2
Caroline	49	F	Car	Trained	12	6
Magnus	20	M	Car	High school (trained education planned)	Unemployed	10
Astrid	57	F	Car	Bachelor	22	13
Kaj	59	M	Car	Trained	25	12
Johanne	68	F	Electric bicycle	University	Retired	2

4.2.4 Interviews

The qualitative interview is a research method that provides privileged access to subjects' fundamental experiences of the lived world (Brinkmann & Kvale 2015: 50). The interviews were semi-structured and seek to cover both the factual and an interpretive level of the issue, through guiding the interviews towards specific situations and actions, as well as the interviewee's reflections on climate change and sustainable transportation.

An interview guide was made prior to the interviews (Appendix A), and part of the structure, as well as some of the questions, come from an interview guide made by Doody (2015). His study is about habitual practices of commuters, and his source of theory (mainly John Dewey) is a different kind of practice theory than the one of this study. But apart from that, he designed the interview guide to phenomenologically illuminate the participants' routines and habitual practices of transportation through questions that were structured as a day of transport, which

was useful here. When it came to inquiries about the interviewees' viewpoints on climate change and sustainability, the aim was to get their perspective on the matter; therefore, most of the questions were rather open-ended in order for them to not feel pressured to answer something specific. However, since an interview of this kind is always under the influence of interviewer and interviewee, the results should be viewed with this in mind.

The interviews were conducted during the period March 25th to April 13th, where five of the interviews were conducted in the interviewee's own homes, and one was conducted at a café in the nearby city, Hjørring. They lasted between 50 and 90 minutes. Prior to the interview and immediately before, the ethical considerations described in section 4.4 were informed and consented to, and I sought to be reflexive of possible ethical boundaries at all times during the interview. All interviews were audio-recorded and transcribed.

4.2.5 Coding matters and analysis proceedings

In order to prevent a descriptive glut (Lofland & Lofland 1995), the interviews were coded. I used the steps descriped by Bryman (2008: 550), where the transcripts were first read, then reread, and key words (codes) were written in the margin of the transcripts. The coded material was then interpreted for meaning (Kvale & Brinkmann 2009: 212-240). Where coding reduces data, meaning interpretation expands the text and moves the analysis from descriptive to a more theoretical level. The meaning interpretation was conducted within the theoretical framework of social practice theory and Norgaard's theoretical concepts. This means that the interpretations go beyond the interviewees' own understandings. A claim against coding is it risks the epistemologically challenging danger of reducing the contextual and long interviewee statements, as well as the interaction between interviewer and interviewee into categories (Brinkmann & Kvale 2015: 263-265). Still, this allowed to get an overview of the data and to be able to use the data in the categorised version that provided a way of only using the relevant meanings from the interviews.

I translated the quotes in the analysis, but the Danish versions of them are found in appendix B.

4.3 Validity and reliability

Given the small convenience sample, no definitive findings are generated (Bryman 2008: 183). While the size of the sample could have been larger, the scope and restrained time of this study did not allow for more. The differences of age, gender and education level were intentional, although not in order to make a representative sample of rurally located people of Denmark, but rather in order to include as different life worlds and perspectives on the topic as possible (Bryman 2008: 391). By using in-depth semi-structured interviews with ordinary people's subjective experiences of their everyday life, the true objective transcription and interpretation of the interviews is not possible. Someone else might have interpreted and analysed the data differently. During the interviews, I sought for confirmations of claims made by the interviewees in preceding interviews, by suggesting the claims as a question in order to crosscheck. In order to further enhance validity, a reliability coder helped, meaning that I got two of the transcripts coded by a coder who did not know the hypothesis I am generating, and thus was able to double-check if the interpretations I made were valid (Luker 2010: 202-203). Linking the results to data about the context and to relevant existing studies in the analysis further ensured the validity. One main scientific objective of this study is to result in an ecological validity, meaning that the findings are applicable to the everyday reality and setting of people, at least in this particular Danish setting (Bryman 2008: 33).

4.4 Ethical reflections

As this study's empirical data derives from interviews with individuals in their capacity as private citizens, requirements for the protection of them were central to the execution of the study. The collection of interviewees, making contact, and the interviews have been strictly regulated by the requirements of information, consent, confidentiality and benefit (Kvale & Brinkmann 2015). Every respondent participating consented to taking part in the study, were informed about their rights to withdraw their statements, and their names in this study are pseudonymes, while specific identity markers are blurred in the analysis.

My relations to the region and residents prior to the study were the practical necessity to gain entrée. And it might have made the study better, because I knew parts of their context. But it also raises ethical questions, mainly about how this has affected the interviews and the analysis. This puts extra demands on my role to be reflexive of the interpersonal relations and to be careful with not crossing personal boundaries (Kvale & Brinkmann 2015: 119-126). Since I knew or had

common aquintancies with some of the interviewees, they might be comfortable sharing more with me than another thesis student. Therefore I had to treat the informations with more careful consideration to anonymity. Along with the analysis being based not just on interviews, but also theory and other studies, the role of the reliability coder was also to counteract a possible personal bias of me.

Given the research objective of this study it is highly valuable to include individuals' own reflections and thoughts on their climate change concerns and the details of their mobility practices. The results of this study are not expected to have any other implication on society than the further development of understanding the human processes of acting in a world where the climate is changing.

5 Case results and analysis

The following presents the analysis of the six interviews with the seven citizens who lived in two rural villages. As presented in table 1 (on page 20), four of them were women and three of them were men, and while Jacob and Magnus were 20 years old, the rest were aged between 49 and 68. With the exception of the retiree, all of them had daily transport needs that were further than 10 km from their homes. Five of them drove by car on a daily basis, Jacob partly drove and took the train, and Johanne only rode an electric bike.

The analysis is divided into three parts, but prior to that, the reader is briefly introduced to the life of the residents and the rural villages. The first part focuses on the residents' mobility practices (car, public transport and cycling) and answers sub-question 1 in section 5.6. Second part focuses on the climate change concerns and answers sub-question 2 in section 5.9. The third part of the analysis takes up these results and answers the main research question.

5.1 Living in a rural village in northern Denmark

The respondents live in or around two small villages in the eastern part of the Municipality of Hjørring. Its populations are 280 and 490 residents, respectively. One important difference between the two villages is that one of them has a train station, while the other does not. Other differences between the two villages in terms of biophysical characteristics or village sizes are harder to recognise given the small sample.

According to Statistics Denmark, between 70% and 74,9% of families living in the municipality had access to at least one car in 2017, which is above the national average of 60%. While that number has increased slightly since 2013, there had been a significant increase in the national average commuting distance of 30,1% in the period between 2007 and 2015, and the smaller a city or village citizens lived in, the larger the commuting distance (Danmarks Statistik 2017).

The common negative side mentioned in regards to where the residents lived was that it was impractical in relation to transport. The fact that they all answered transport as a negative side might have been because this was the theme for the interview. When asked whether they thought their lifestyle was different from

their neighbours, transport also was a main theme in the answers: Everybody mentioned that they were much like their neighbours in the sense that everybody owned cars and mostly two (or more), or they mentioned that they were not like their neighbours because they commuted a different distance, mode or in different directions or had a different car or number of cars.

It was clear that household income and job status varied a lot, as well as how much the residents involved themselves in the social life of the village. To almost all of them, there was a sense of identity linked to where they lived, either because of nature, a slower pace or the community in the village suited them. Something that came up during the interviews was a sense of identification with living in a rural area, as opposed to the city centre. This aspect of the tension or opposition between centre and periphery was something all of them expressed. This was not just about mobility and location for public services, but also a mental and cultural distancing between Hjørring and the villages, as they perceived an arrogance and blasé of the city (and other larger cities in Denmark) as well as their own resentment. This theme will be revisited further on in the analysis. The next section is concerned with the mobility practices, beginning with that of driving a car.

5.1.1 Car practices

With help from social practice theory, this part of the analysis is structured around the three categories that Shove *et al.* (2012) conceptualise as three different elements in a practice: materials, meanings and competence. During the interviews, the participants were asked to describe their last week in terms of transport and thereafter to describe one of the transport trips in depth. These particular trips were: five car rides, one train ride and one e-bicycle ride, which reflected the participants' everyday transport usings. This section focuses on car driving.

Some taken-for-granted material elements in the interviews are obviously important: their cars, roads (country, highways, gravel roads), diesel and petrol stations and supply, auto repair shops etc. It is assumed that none of these material elements are missing from the car driving practice in this area. Ability to take telephone calls, as well as the storage function of the car, was important to the residents. Every one of the participants had grocery stores within what they perceived as either bicycle or walking distance (1-7 km away from their homes), but the residents argued that the prices or assortment was better in bigger supermarkets.

Material elements must be integrated into performances of mobility by practicioners. This requires both positive meanings and competences to be

accessible to and accepted by the carrier. One of the meanings that was linked to the car was a need to be in control. Overall, the main positive association with driving a car was its high standard of having control over arrival times and efficiently getting from A to B. Although this was not as articulated by all the residents, time use and ability to arrive on time, was (along with prices) the main arguments against using public transport or bicycles, as car practices were closely linked to other practices. Time spent in the car, however, was attributed with positive meanings such as important conversations with one's child or it represented a break from the busy work day, where the resident could adjust from one meeting to another and, as she described it "*breathe a little bit*" (Lone). Only Astrid mentioned that it was tiresome as well as time consuming to drive a lot in itself. She had recently changed job location from 800 m to 22 km away, which might account for the presence of this experience to her.

The car as a means to provide others with a ride was also a main meaning associated. This was both positive and negative, as they liked to be the ones who provided and could help others, but to the ones with children who could not drive, this was a tiresome element. Not in terms of driving but in terms of the hours spent driving, waiting, and then driving home. Astrid and Kaj recalled that when their children lived at home there was a lot of this type of driving, and because they lived further away than most of the childrens' friends, Kaj had driven other children home but not benefited from other parents driving his children home. An opposing experience came from Jacob, who described how he and his friends had begun to carpool, and that their parents had begun to do it as well. The benefit of Jacob's experience is that carpooling played a socially uniting role, where they were *"all in the same boat"* (Jacob). It was a part of their identity and way of being a part of a community of people who can just ask each other if they can ride along. The disadvantage is that this does not help those who might not attend the same arrangements or do not know of this unformally organised transport mode. This double side of experiencing unity and condition of being united means that this practice rests on a communitarian community of values, where Jacob's entourage is characterised with some degree of homogeneity and where the payment rests on reciprocal expectations that they help each other. This can make it difficult for those who do not own a car or live further away from the larger villages, like Kaj. Also, the environmental gain of carpooling practices is much more successful if it attracts carriers who use it instead of owning a car, which in turn requires well-structured public and active mobility practices (Kent & Dowling 2013).

Most routine elements of competence were not articulated in the interviews, presumably because this would be better explored with go-alongs and other participatory methods than semi-structured interviews. But whether it was driving a small car, or having an efficient engine, the emphasis that this was environmentally important, was something most of them mentioned.

Though the residents emphasised the environmental consequences of their driving, none of them wished to change their transport mode. They were all asked what their ideal transport would be, and only the two young men preferred to ride bus since it was more comfortable and often could get them from A to B without any other transport, unlike the train (and busses were cheaper than cars). The others preferred their cars. Johanne had not bought a new car since her and her husband sold theirs 11 years ago. The reason for this, she argued, was that after seeing her mother and mother-in-law struggling with public transport in their old age, she wanted to learn to get around on an e-bike in order to avoid the same life situation. This exemplifies how the only significant problem with car driving is when someone either does not have access to a car or does not hold a driver's license. This main problem perception is also found in a comprehensive study on rural residents' perspectives on their mobility practices in 68 rural Danish villages (Johansen & Chandler 2014).

To sum up, car driving practice is the norm in the two rural villages, with well-structured and mostly popular elements constituting the performances of it. But this is not a satisfying answer, given the mitigation imperative of climate change. The next part, therefore, introduces the elements of low carbon transport practices, namely public transport and cycling, in order to explore linkages and fellow elements with driving a car. After this, sub-question 1 is answered.

5.1.2 Public transport practices

As the sample did not provide much experience with public transport as a routine practice, the material part of it is mainly based on public documents written by the regional public transport provider, Nordjyllands Trafikselskab (NT).

In terms of material elements, and apart from the train station in one of the villages (with half hourly departure times), there were three bus routes that went in both directions with half hourly or hourly departure times. The school busses stopped near five of the seven residents' houses and were accessible for non-schoolchildren to take as well. But these were then, in turn, not available in the summer. NT has since 2018 offered mobility-as-a-service solutions (Nordjyllands Trafikselskab 2019). Within public transport research it is recognised that there often is a discrepancy between users' and operators' perceived quality of service (Rietveld 2005). One difficulty about users is that, from their point of view, critical incidents tend to accumulate over time, which means that their perception of reliability often grounds upon single experiences of dissapointment (Friman *et al.* 2001). Also, while reliability, frequency, speed and prices are important factors for the attractiveness of public transport, it is more dependent on user

demographics, life situations and familiarity with public transport (Redman *et al.* 2013).

The trains, but especially the busses, were viewed by most of the participants as inefficient and inadequate. They had different logics for this. Some expressed certain incidents where they had experienced something that was, in their opinion, unnessecarily inconvenient to them and did not make sense to them. E.g. the nursery teacher, who now had to reserve seats when she took trips with the children, even though the busses had plenty of free seats. Another logic was that the busses were fuelled by diesel, so the utility of the mode did not lie within the environmental effects, according to the residents. Public transport was instead to the benefit of the ones who could not afford a car. And it was a second choice to the car. As Astrid said, she was not satisfied with the public transport and worried about the day when she would be so old that she would be "*forced*" to use it.

With increased digitalization, there are several emerging skills required to use public transport. For example, the introduction of a digital ticket system means that every commuter has to remember to check him or herself in and out, at travel card stands or via an app. Although it is possible to call in, NT mainly promotes an app that shows the commuter which options are available to him/her depending on where they travel from. Time schedules on bus stops are now optional, according to The Danish Road Directorate (Vejdirektoratet 2015: 63).

Apart from the digital aspect of public transport, the time schedules also mean that it requires some skills to know both when and where and how the bus or train goes, and what to do when it does not go. Jacob had for instance established relationships with friends in the city where he could spend the night when he missed the train or time schedules did not fit his day. He recalled that it was a blessing when his friend living in an apartment in Hjørring agreed that this was okay, as well as when his classmates discovered it and he realised that he was not alone:

> *"I remember in 1st year that I was tired of asking, also because I had not done that before and I did not know if it was just me."*

This indicates that competences here can have strong social linkages – according to him, half his class depended on public transport. But it also shows how the lack of this social establishment can lead to feelings that resemble the social exclusion problems that Lucas' work points to (Lucas 2004).

All of the respondents were asked whether they thought the public transport services should be different in their area. Given the relatively low engagements with public transport practices and negative associations with it, this was not something they were particularly passionate about. All of them, more or less explicitly, emphasised that it would be nice with improved frequency or flexibility, but they also expressed that public transport *"can just never get really*

good in this area." (Jacob). The rural periphery context was compared and opposed to the city centres. For some, this rationality was internalised into the residents who expressed that 'we should not be too demanding'. For others, the frame was a frustrated resignation towards municipality and governmental priorities on public transport. This anger or dissatisfaction was not just because they identified polliticians as responsible for the limited transport mode choices to their needs, but also because the limited number of modes with effiency to their needs were from their points of view connected to a larger trend of phasing out rural villages like theirs. This is interesting because it illuminates that the ideal practice that the residents talk about (car driving) might only be ideal to them because it is the only practice where linkages and elements are most successfully constituted.

To sum up, public transport was not as popular a practice as the car, not even in terms of perceived environmental impact. Rather, the half-empty busses symbolised the political neglect of rural villages.

5.1.3 Cycling practices

The third kind of practice investigated is cycling, and as the sample here was also limited, the practice is mostly focused on Johanne who traveled by e-bike, allthough all the residents owned bicycles.

Johanne was now retired, so she did not travel as far as the others did on a daily basis, but prior to her retirement, she had commuted daily to Hjørring (15 km each way) on e-bicycle. To her, the material elements of the practice were not perceived as obstacles for taking up the practice, but had rather been turned around and linked with positive meaning to her, although she emphasised that she felt priviledged that this had been an option. The material differences between car and bicycle were only missed when she recalled the spontaneuous trips to the beach to watch the sunset. When asked about clothing, she could mention a lot of different types of clothing and bicycle bags that she had for her biking, and it all related to weather.

This illuminated how material aspects of the practice relied on a lot of charcteristics to the carrier of the practice that had to do with competence and meanings. In terms of competence elements, the know-how of choosing the right clothing had evolved during the 11 years, and it had taken some trials and errors to get it right, which indicates that a condition for the practice to be taken up has been that she had had a high income. In terms of meanings, the element of weather and visibilty of nature due to the slower pace (compared to car driving) was something she linked to her mental well-being. The bodily element of the practice with regular physical movement had represented the same function of

getting the thoughts together before and after work, as some of the others had mentioned that their car driving to from and during work represented. Except for the two who did not like to cycle, all the other residents had similar well-being associations to cycling, though only leisure cycling.

When it came to safety and biking, Johanne expressed no concerns of this when asked directly, even though she said she had been run down two times and had had her hand on the cooler on cars several times. Safety was something that three of the others mentioned, but especially in regards to the poorly mainained cycling lanes where they lived. As Johanne lived in the other village, this might not be comparable, but it indicates how elements of a practice can be differently attributed by each carrier – not just by living where the infrastructural elements of the practice are bad, but also through different risk perceptions. Studies furthermore show that when cycling is not practiced by many, this increases the expectation that cyclists should perform like cars and other machine-related modes, which in turn neccessitates specific physiological and psychological competences for the carrier (Larsen 2017; Steinbach *et al.* 2011).

To Lone, who was one of the three living near the poorly maintained lane, this lane represented a symbol of the political neglect of their rural area and it meant that it was more comfortable, and even safer, to bike on the road, which was partly a busy highway. Lone had because of this not biked with her children, and she felt unsafe and stressed about biking on the busy part of the trip. Kaj and Astrid also mentioned the cycling lanes, but only Astrid ascribed it with a feeling of uncomfort and unsafety, while Kaj with a laugh expressed the silliness of cycling on the road with a cycling lane beside him, he did not express to feel unsafe about it.

When the other residents were asked directly if the weather had an influence on their days, none of them thought that it had any relevant impact. As Kaj said, there had to be an extreme weather situation if it were to hinder him from leaving the front door and getting to the car. Jacob said that weather was not important to him, even when he cycled, because if he got wet, then that was that. Later in the interview, however, he said:

> *"Even though I think of myself as very environmentally conscious, it is most comfortable to use the car, but I struggle more with it during winter."*

Although they might not be as articulated about it, weather seemed to impact their transport mode and which directions they travelled with implicit, latent knowledge.

In a UK study on cycling practices, the connection between leisure and utility cycling was investigated (Spotswood *et al*. 2015). The study shows how a low number of carriers of utility cycling practices make the meanings associated with it 'culturally incongruous': with utility cycling being unusual, this created a

perception that could be both positive and negative, but they established the practice as something unattainable to the potential carrier. In the case of Johanne, the beginning of her utility cycling practice had led to social struggles because she fell between two chairs: those who only cycled as a work out and were unimpressed with her bicycle being electric, and those who mainly drove cars and regarded her as a hero. The first group made her feel ashamed that it was an e-bike and the latter made her feel that she had to guard herself against the strong identity marker her mode attributed to her. As she explained about conversations with the latter group:

> *"I am very conscious when I tell that we cycle, then I quickly say: it is an e-bike, right, so there will be no ambush.*
> - *Why?*
> - *Well, because people should not think that- I am not a hero, it is not why I bike, right, I bike because, well first of all because I find it nice to bike and secondly because I am rather conscious about what goes on in the world around me, I don't need to contribute to my grandchildren not having a decent life, well, I don't know if it has an impact, but if I can do something, because if individuals can do something about it, then who can, I mean such a movement has to start from the bottom in order to have clout."*

This shows how the dominance of the car practice is not limited to the machine and structural materials of car driving, but also has strong ties with how meanings and competences are socially distributed so that the practice with fewer carriers is regarded out of the mainstream. With a social practice lens and the structuration theory by Giddens that it builds upon, this shows how even though the conditions for mobility have been established along with heavy social structures, then the action, or the performance of the practice, ultimately depends on the carrier who can choose to reproduce the common practice or replace it. But the quote also shows that this projected image of herself as someone who has willpower and a political project or what others might assume, this is an identity that she distances herself from.

5.1.4 Competition to car practices

This brings the analysis to an answer to sub-question 1. Car practices were a persisting practice with well-connected and fully functioning elements, because vital practices in everyday life depended on these elements. The meanings varied among the residents, from the positive ones being it was practical, a tool to help

others with a ride, and a mental break from everyday business – to the negative ones being about sitting still for too long, time usage and mainly how others, like old family members and children, needed rides that took most of an evening several days a week.

The phenomenological investigation of the residents' mobility practices and perceived constraints towards alternative practices, showed that embodied experiences such as the weather or physical exercise elements influenced their attitudes towards mobility practices, which highlights the relevance of practice approaches that encounter embodiment-elements (Cresswell & Meriman 2011: 5).

The public transport, counting only the busses, draws on the same infrastructural material elements as cars, but does not have the same A to B efficiency. Most of the residents emphasised how bad it worked, but the most interesting malfunctioning elements of it were in terms of competence and meanings. Those were closely linked to the fact that the practice was compared to and competing with car practices, because it was about losing control or being able to handle situations where one could not get home. And it was not considered an act of low carbon mobility, but rather it was a second-best choice for those without car driving access.

Cycling and car driving were even closer linked to each other because they affected each other during the performances of them. Two main insights came from this part: 1) How cycling lanes, while being an important part of cycling practices, is not in itself as important as how it affected different meanings to each carrier of the cycling practice, especially about how dangerous it is to cycle with rural infrastructure. 2) Building on the study of Spotswood *et al.* (2015), the concept of cultural incongruence is clear to see, with utility e-cycling positioned by the leisure cyclists as unattainable, while the utility cyclist struggles with this, to her, exaggerated reception of her transport mode.

5.2 Climate change concerns of the residents

The following three sections serve the purpose of answering sub-question 2, about which strategies of action the residents used. As stated in the beginning of this study, I use the phrasing 'climate change concerns' to encapsulate how the residents understand or frame climate change. This section provides some of the nuances to how this was the case.

All of the residents answered, either by themselves, or when directly asked, that they thought a lot about climate change, and that they were worried about it. In Norgaard's theoretical framework she argues that thinking and emotions are closely related and that we conceptualise something like climate change through our emotions. Emotions that then, in turn, are managed because social norms do

not allow for all of them to be taken up. There were glimpses of feelings in what the residents answered, especially to Johanne who seemed almost in grief, when she talked about climate change. She said, for example:

> *"I can get like, almost physically ill, thinking about if the water runs out – then we can do nothing, we cannot live without water, and now we're polluting it."*

As that quote shows, her feeling is partly a result from thinking about potential consequences of climate change, partly from thinking about how she sees resources being overused right now. Other feelings were about residents' own conscience. For example, Jacob mentioned several times that the only thing wrong with his driving was this 'environment bell' he had in his head that rang every time he drove, so he felt some form of guilt or shame.

The first question I asked about climate change was whether sustainability plays a role in their everyday lives, as I wanted to guide them as little as possible on the issue. The total list of everyday sustainability acts was long, indicating they had spent time thinking about how to act. But it might also have been a defence since I was asking about it, and they wanted to be able to answer. Some of the conversations continued a bit after I had ended the interview, and they were often about what I thought they should do in terms of transport or about the severity of climate change. The fact that they wanted my opinion on how they could possibly use something else than a car for transport was sometimes rhetorical, sometimes sincere, but both pointed at an interest in decreasing personal carbon emissions, or a validation that this was impossible to them. When I after one of the interviews mentioned my own fear about extreme weather events, I was asked: *"but that is not going to be a danger in Denmark, right?"* which made me doubt what kind of scope they thought climate change had as a problem, and that I had maybe taken for granted what they meant when they said that they thought a lot about climate change.

For half of the participants, the issue of climate change or environmental concern showed during the interview, before they were directly asked about it. Most of them emphasised the pollution aspect of cars, while one asked, jokingly, if I was undercover for the government since I wanted to know these things. In Norgaard's study from Norway, humour is one of the weapons used to disarm climate change issues when it is taken up – not necessarily consciously, but because of norms of conversation (Norgaard 2011; chapter 4). In this case humour also played a role sometimes. When I for instance asked Astrid and Kaj if climate change was something they thought about, Astrid answered, with a laugh, that they had just flown on vacation, and after a short pause Kaj asked whether I would say that they were then behind or ahead in their carbon budget.

Another conversational norm from Norgaard was that there could be a cultural norm to be smart or knowledgable, that steered a conversation. Although the sample was too small to conclude anything about characteristics, I found that the two academic residents, as well as the young man from an academic home, were significantly more confident with these questions and rather taken with explaining it. Norgaard identifies two problems with this norm: 1) If it is strongly tied with a norm of staying in control, it can be used to distance the individual from the problem, because the concern is turned into an explanation, and that explanation is what is paid attention to. 2) With climate change nobody can know everything, so the risk is that too many smart people spend the rest of their time just studying the problem. None of these two problems seem to be very relevant here, but especially one of the residents seemed to have a norm of being smart and in control, and this might explain why he struggled the most with the questions about climate change. When I asked whether climate change was something he thought about, he answered:

> *"Yes, I try as much as possible to think about it, but I probably can't think about it too much, because I think I'm going to- I mean, if I could, then I would bike every day to Hjørring, then I would want to cycle every time, but I also just think that I don't want to, but then again, I definitely think that it's something that's in my thoughts and that, and for example when my parents had to buy a new car, I told them that they had to think about what they were buying, so that they did't just buy an old car with bad gas mileage, but so I'm not really into it, all of the sustainability and climate, but…*
> - *Is that because you don't care about it or because it doesn't fit the life you live?*
> *- I think that it's because I haven't quite understood it, so I haven't really read up on it, it's more that."*

This shows how climate change concerns can contain not only an emotional concern but also a concern that might be perceived as requiring technical or scientific skills to grasp, or at least a concern that it is complex and uninviting to sit down and try to understand.

5.2.1 Tools of order

Norgaard uses two categories for the strategies of action that she discovers in her case: tools of order and tools of innocence. Tools of order function as a preservation of an ontological stability.

Conversational norms also structured the tools of order, namely, how this issue was difficult to take up in conversation with others. Especially Johanne struggled with this, because of the gap between her worldview and what is important to attend to – and other peoples' differently scaled or contradictory views. During the exceptionally long and dry summer in Denmark in 2018, it had been uncomfortable for her how so many had 'cheered', telling that her climate change concerns had isolated her emotionally from her network. She could laugh on the inside, she explained, when she listened to people say that they were very concerned about climate change while they still flew on vacations, drove around or bought a lot of new clothes for their grandchildren. Yet, conversational norms, and maybe also social norms about how much to meddle in each other's life, prohibited her from talking with others about this. She gave examples of how it was difficult to talk about e.g. flying, since a lot of her friends would feel under personal attack, because it was about their lifestyle. When I asked whether she could talk to her children, she answered:

> *"But it is their life, I am not there to tell them how they should live it, I should be the last one to do that, but I notice, how they think it is cool that I threw away all the fiber cloths and knitted cloths, small things like that, and where they say, that they would also like those, fine, then I have knitted for them.*
>
> - *But can you say to them that you don't think they should fly?*
> - *No*
> - *You don't say that to them?*
> - *But they know that, I mean, I see that they read Tænk[1], they know it."*

To Johanne, the important thing was to not decide on behalf of other people who might have different conditions for living less carbon intensive. The notion that it was important with a plurality of sustainability interpretations was almost explicitly said by Lone, who gave this answer to whether sustainability played a role in her everyday life:

> *"Yes, I think we each choose our kind of sustainability, you know, some say that things have to be organic for instance, others say that it has to be bio dynamic, and I belong to those who think that there is something sustainable in when foods are European, so I prefer carrots and kale and root vegetables instead of soy beans and avocados no matter how organic they are, and I*

[1] Tænk is a Danish consumer rights magazine

think that in the long run we could benefit from having more things that were local and this also counts for transport, that we in our local environment can meet the needs we have, because we have to eat and drink and transport our selves."

This brings the text back to the strategies of action that draw on cultural tools of order. There were basically three kinds of strategies in play that all worked together and fit with the strategy of emphasising sustainability as something that could be selectively interpreted. One strategy was to say that price, time usage, accessibility etc., prohibited a different transport mode than the car. The logic of this strategy is to say that climate change concerns are less important than convenience in everyday life. Another strategy was to distinguish between thinking about climate change and on the other hand the travel and transport mode choices that they made. For example, Kaj says, rather firmly:

"I mean, we have a car, right, here outside, it goes 15 km pr. litre and if we are going to Copenhagen, then we will damn right drive to Copenhagen, and if we are going somewhere, we will drive there, we are not going to speculate whether if we might take the train and save a bit of CO_2."

This quote pictures the car driving as a choice Kaj makes, discarded from his concerns. The third significant strategy that served to reproduce an order was the social narrative about living in the rural areas that says you could not live here without a car. The narrative is of course also a justification of a strategy of adapting to the infrastructural circumstances, which makes car driving more convenient. This narrative and connected adaption strategy is further explored in the next section, as this both works as tools of order and tools of innocence.

5.2.2 Tools of innocence

Tools of innocence, in Norgaard's definition, are strategies that distance the user of the tools from responsibility. Part of sustaining the narrative described just above, was to defend the car necessity of the rural areas against the interpretation of climate change mitigation that was made by people living in urban areas and/or people with more power and wealth. There was anger and indignation pointed towards those who did not take their time to understand how important private cars are in rural areas. This strategy is a tricky one, since part of it is to rationally frame a problem in terms of infrastructural inequalities that the resident does not control. But on the other hand, this narrative influences and constrains the choices socially acceptable to local residents. It legitimates answers that could sometimes

go like ‘why should I take the bicycle instead, when it in no way is easier?’ It also constrains cycling, for example when Johanne sometimes steps into a car when a situation allows, because cycling would not be a socially accepted norm.

A variant of this is what Norgaard calls technological innovation faith. Especially Jacob was very ‘excited’ about the technological innovation on car engine efficiency, Teslas and hyper loops. This ascribes a positive meaning to the concern, but it also makes the resident the bystander of the problem.

Another strategy was the normalisation of the resident’s own way of life, through labelling less carbon intensive actions as fanatic or idealist. For instance, Astrid, who emphasised that sustainability was something she was very concerned about in her everyday life, ended her list of actions with the following sentence:

> *”We are not pure or fanatic, I would not say that, but I would say that we think about it a lot.”*

When Lone says that she is not an idealist or when Astrid expresses how she and Kaj are not fanatic in their thinking about climate, this demarcates their own actions from (potentially) more sustainable actions by establishing their own actions as normal. Johanne was also preoccupied with distancing herself from being a fanatic.

The same strategy, but in the opposite direction, is to point at those who supposedly emit *more* CO_2 than oneself. On describing how she is driving to the family’s cottage by the sea on most weekends, Lone notes:

> *”After all, it is CO_2 straight up into the atmosphere for my own pleasure and bliss, because I just have to drive down to my cottage, but then I don’t fly around the world, so it’s like everyone finds their excuses and so (...) Because we each have to find our own way around it, right? The black car, it's one of those Citroën Caktus and it actually goes 25-26 km on the liter. "*

This, in turn, leads back to the call for a plurality of sustainability. The argument that it is okay to drive a car because others fly, shows a strong nexus of tools of innocence and tools of order in the arguments.

These findings bring an answer to sub-question 2, about which strategies of action the residents used when they reflected on their transportation usages and their climate change concerns.

Climate change concerns were an important factor in the residents’ everyday lives and while it remained unclear how much of the scope of climate change they were aware of, they had it in mind, acted (though not accordingly and not much in terms of transport) on it and expressed to varying degrees emotional struggles

with it. Their anger and frustration towards the infrastructural and public service providers is not unrelated to this. Conversational norms restrained some from being aware. And tools of order and of innocence provided the residents with strategies that legitimised their sensemaking and individual agency.

5.3 Climate change concerns through the practice lens

The preceding analysis has so far identified strategies of action that the residents expressed. It has described the elements and linkages that constituted the residents' mobility practices and how these elements interplayed and made way for a more popular car driving practice than public transport or cycling practices. In this part of the analysis, I try to trace how the strategies of action affect the mobility practices and, in the end, thereby answer the main research question: what is the role of climate change concerns in mobility practices in rural areas?

There are at least a handful of lines of analysis for this question. The first one is that climate change mitigation is a secondary motivation, meaning that it more or less is not guiding for the single decisions. This has several explanations. First, changes in transport require changes in other practices. This analysis uncovers how the residents are located in a larger political economy, where jobs are centralised, public services centralised, and infrastructure maintenance prioritised in city areas. These structural and economic developments are more than just the unmaintained bicycle lane on the countryside. It is also identification with rural village values, as a counter life to lives in cities, and a resentment of the logics of sustainability that urban thinking produces. The fact that changes in mobility practices require changes in a wide range of other practices, such as jobs or how often children in the household should go to activities far away, demands that the role of climate change concerns has to be connected to larger structures of everyday life than just the mobility mode or travel frequence choice.

Changes in mobility practice modes also require emerging elements that are not necessarily pre-existing. Especially new competences are required for taking up new mobility modes, the ones in this study particularly being social skills, digital skills or economic 'skills' understood as the willingness and ability to invest in cycling gear in order to cycle longer, and in different kinds of weather.

But in this sample, changes towards low carbon mobility were also not due to climate change concerns. Rather it was about private finances or non-ownership of a car, and it was because of health benefits that utility cycling was taken up. At first hand, this leaves climate change concerns with two roles. When a low carbon mobility practice was taken up, the mitigation benefits of this worked as a reinforcing role in the new practice. The residents expressed great satisfaction whenever they had done something in order to mitigate emissions. This is the

positive side of it. But the concern is still there, when high carbon mobility practices are performed. For instance Caroline, who lived surrounded by cultivated land, but close to the beach, and took the car into a planted forest in Hjørring when she wanted to take a walk. Her immediate surroundings were in her perception so filled with slurry that it was a health risk to her and the beach was too windy. She recognises the contradictions behind this choice when she reasons:

> *"Sometimes I simply don't dare to go out. And then I drive into Hjørring where I can take a walk in the planted forest. That's not smart, that's crazy. Simply crazy."*

In this quote it is evident that the climate change concern does not have a steering function, but that it is visible to the resident. The residents benefit from their implicatory denial in logistical and economic and convenience terms, but as Norgaard also emphasises, the disadvantage is in terms of the identity struggles and emotions that they then discard through their strategies. In this sense, as Norgaard argues, climate change threatens individual and collective senses of identity and whether or not our actions make us good or bad people. In this example, climate change concerns then have a role of agonising the residents.

Another obvious place to look for climate change concerns is from within the mobility practices. Climate change concerns affected the cultural *meanings* of the mobility practices. The most prominent example was that utility cyclists, posing a symbolic threat to the car-ordered everyday world, was framed as idealistic or fanatic and therefore, in the resident's eye, unattainable (though not necessarily as a negative frame). There is a powerful interaction between the strategies of action on mobility, the hegemony of the private car and, as this exemplifies, the meaning interpretation of e-cycling as unattainable by the carrier of this meaning.

Malfunctions of the *material* elements of low carbon mobility options as well as the well-functioning material elements of car driving all produced resignating anger and frustration towards those in power of these kinds of infrastructures, and these emotional and political struggles were reinforced by the climate change concerns. The car itself, as a material element, was both viewed with pride when it had an efficient engine, or it was explained away as the most affordable best version, leading to the climate change concern again having a secondary role. Climate change concerns as *competences* were either a resident's ability to use extensive knowledge about transport technology innovation in order to pull it out of his/her scope of action. Or it was a resident's disability to interpret his climate change concern into his everyday life because of his norm of being smart on the subject constrained him from going into the thoughts of it. In this sense there was a clear relationship between comfortability to talk about climate change and

educational level, but no clear causality between being climate change concerned and changing mobility actions.

A third way of investigating the role that climate change concerns has, is to look at the micro, meso and macro level in turn.

On the *micro*, the individual level, and apart from the agonizing role, climate change concerns were managed by a focus on what was doable and attainable to the resident. This is something Norgaard describes as particularly visible among teachers, who did not teach a careful examination of what climate change might bring, how it will affect us, or what it implies on our actions, but rather the teachers prioritised a curriculum about what was doable in small-scale everyday student life. Within the transport practice, a modal shift from private car is a big transition in everyday life, whatever the alternative mode will be, and so the residents seemed to put their energy into decarbonising other aspects of their everyday life, regardless of the GHG mitigation effect.

The centre of this study was the *meso* level, meaning the cultural, social and societal interactions inbetween the residents and their peers. One of Norgaard's main conceptual contributions to this study is the notion of conversational norms that guide what can and cannot be said about climate change in different situations. Something I think she underplays and that is found in this case is the morality norm at play. This was very evident by Johanne and Lone, where the first one did not speak with others about climate change, because it felt like a personal attack on her friends. Lone, as shown in the above sections, was very taken with the argument that everyone finds the actions that work for them and that no one should judge each other. When Johanne chooses not to discuss this issue with family and friends, she does so partly by reasoning that she does not want to seem extremist, and that she does not want people to feel she is criticizing their choices. In other words, she does not want to be moralizing and she seems to think that each individual has the right to decide which practices they take up or not.

This exemplifies the problem with Norgaard's underestimation of the role of morals. Because: does morality not play a role in each individual's choices as well as how we engage with our community? Philosopher and political theorist Hannah Arendt addresses this in her theory on how the *"private realm of necessity and the public realm of actions and politics have become blurred in what she calls 'the social'"* (Hargis 2016: 476).

According to Arendt, the private realm concerns basic living conditions, and as long as we struggle to fulfill these, we do not have the means to address problems in the public realm, that are relevant to the community and over a longer time-span. But the problems in the public realm, to which climate change mitigation would easily fall under, have gradually been individualized since classical liberalism won influence in the eighteenth century. In liberalism, protecting the private realm of freedom is the central role of the state (Arendt

1965, 1989, 2006 in Hargis 2016: 477). This ultimately limits the issues which can legitimately be taken up in politics, and in communities, to question how the rights of individuals can be secured, and how society can protect private property.

A barrier for climate change concerns to have effect on practices in communities according to Arendt's theory is therefore that in societies that have been influenced by liberalism, the political and moral issues of climate change concerns and related practices have been delegitimized as public issues. While the role of climate change concerns within these social bonds might be heavily constrained by norms of conversation, emotion and morality, the social reciprocity towards another is regarded as a key driver towards mitigation behavior (Urry 2013: 222; Shove *et al.* 2012: 160).

Almost luckily, such a development of local community might be possible in a case like this, because of the *macro* structures of climate change. Through a cultural lens, the provision of transport options in rural areas could be described with the concept of hegemony in Gramsci's interpretation (Gramsci 1973 in Robbins 2012, chapter 11). This implies that the mass performances of private car driving are maintained by dominant groups in society, and that this maintainence of the hegemony is not through direct force, but through securing the consent of most of the population. Individuals do not necessarily consciously give such consent.

Within political ecology literature on power and individual identity, this notion of hegemony is further developed in the context where there are pressures that threaten a community (Robbins 2012). The division of responsibility proposed by the hegemony can become internalised into individual actors, e.g. when they argue that they ought not make demands for better public transport, since they do not live in a densely populated area. But it can also lead to an act of 'rural, everyday resistance' (Robbins 2012: 63). When livelihoods are challenged, political ecology studies tell us that social mobilization can lead to new collective identities. Heterogenous groups, such as the residents in this case, can be linked together through the livelihood threads imposed on them, because they have in common an opposition to the hegemony of national transport planning.

As with the example of Jacob's carpooling and the sense of community that it provided him and the others with, a focus on what the individual can do is a strategy that unites a group 'in the same boat' and provides a lesser degree of helplessness. It gives them a narrative of resistance or opposition to the hegemony of transport provision that otherwise creates difficulties for their mobility options as well as low carbon mobility options. This desire to act collectively against car driving through the carpooling practice exemplified a positive impact of climate change concerns.

Summing up, climate change concerns had both positive and negative roles on the decarbonising of mobility practices, along with neutral or potential roles. The negative part amounted to the cumbersome sense-making when the conscious concerns illuminated the disconnection between them and the resident's actual travel action. It also strengthened the cultural incongruencies of utility cycling negatively, making the identity element of that practice even more sensitive. Concerns as competences were mainly negative, either because a resident could outsmart himself out of the struggle that he did not act, or the resident could not and therefore did not engage with the subject. Then there were positive roles, the main one being that, although a secondary motivation, it provided personal satisfaction and played a reinforcing role when low carbon paths were chosen. It created a positive effect to the more efficient cars (although price incentives here might have played a stronger role). There were a lot of practice aspects where climate change concerns remained neutral, such as towards elements as weather, social skills, digitalization or economic abilities, except for the negative impact it might have when it came to the focus on doable things in terms of sustainability: everyday mobility did not fit into that category.

Then there were potentials to the role of climate change concerns. While the residents handle their transportation needs however they are able to, they do have feelings of helplessness and frustration towards e.g. poorly maintained cycling lanes and seldom bus departures. This leads to experienced elements of social exclusion in regards to choosing low-carbon transport options, as citizens living in rural areas of Denmark and as global citizens who feel minimal impact control on the state of sustainability. But this also contains a potential of putting public pressure on the government, if their concerns were connected to larger structures. Morality and conversation norms created an inconvenient role for concerns, but if they somehow changed they would be a force in the practices, such as when the carpooling creates a social bond of overcoming the contradictory spatio temporal arrangements of modern rural life and the rural struggles with taking up low carbon mobility practices.

6 Discussion

The findings show resemblance with Norgaard's work in terms of some of the residents' strategies of actions and because the tendency of implicatory denial was also present. The sociological engagement with the residents' points of view provided for an understanding of the interconnectedness across societal scales of this issue, which Norgaard expresses very well when she writes:

> *"What individuals choose to pay attention to or ignore may have psychological elements but must ultimately be understood within the context of both the shaping of interpersonal interaction through social norms and the broader political economic context." (Norgaard 2011: 134).*

The differently situated orientation towards mobility practices in particular, however, enabled for a more nuanced understanding of what caused these strategies of action and how the residents' concerns were specifically linked to or not linked to their mobility practices. It shows that all the elements of a practice need to be available, which depends on socio-technical systems and wider society. Climate change concerns or similar forms of moral reasoning alone are therefore unlikely to create the kind of transformation within transport demand that is required.

This study is written in the social practice tradition and can thereby offer something else than individual- or cognitively oriented behavioural models (Shove 2010a; Schwanen *et al*. 2012; Doody 2015). The persuasiveness of a social practice approach is that it takes the unit of analysis to be practices and the results can therefore be rather hands-on. With its basis on six interviews, this study cannot legitimately draw practical conclusions in this regard. But it is interesting to reflect upon what might be changed in order to mitigate transport emissions in a case like this. Here Shove *et al.* tell us that changes can be understood in four ways: 1) The elements that constitute the practice can change. 2) A population, or in social practice terminology, carriers of practice, can change. 3) The ways practices 'bundle together' with others can change both elements and the processes of recruitment. 4) Practices can change with new elements or with existing ones that are related in new ways (Shove *et al*. 2012: 120).

In social practice theory, the analytical distinctions illuminate how the elements of the practices act differently. For example, where symbolic elements (meanings) tend to be cumulative over time, material elements tend to be disruptive. Emergences of competences rely on abstraction and translation processes. This requires mobility interventions to not only focus on disruptive technical interventions, but to integrate different change conditions into the practice. It is necessary to think about change in different ways at the same time, since single elements rarely have the individual capacity to change the practice (Watson 2012). For instance, in a comprehensive study on smart mobility initiatives in rural villages in Denmark (Johansen *et al.* 2016), an important conclusion is that mobility solutions which are regarded as flexible from an urban perspective, do not translate to flexible solutions in rural areas. A focus on rural preconditions is therefore also relevant when it comes to thinking about specific solutions.

According to Shove (2010b), social practice approaches are often absent in policy developments of behaviour change. This has the downside that this research area does not benefit politics, but an advantage of this is the critical distance that social practice discussions in turn can operate with (2010b). For instance, problems of normativity can be discussed.

A lot of the transport needs of the residents were vital to their livelihoods, but it could be argued that some of their transport could have been avoided or without larger consequences could have been changed to a low carbon mode. What is so interesting about such an argument, is that it raises questions vital to the problem of climate change mitigation: when actions or conditions to act are outside of the resident's individual (or perceived) scope, how much of this choice can legitimately be placed on the political or similar authoritative actor? Or, as Mattioli proposes in his philosophical-sociological framework, how can mobility needs be graded or prioritized so only transport vital to human needs is reproduced (Mattioli 2016)? Addressing unequal burdens of low-carbon policies, requires more research on low-carbon social practices that simultaneously contributes to human well-being (Simcock & Mullen 2016). Again, this requires normative assumptions about what level of well-being is minimal. Political theoretical studies thus also benefit from integrating contextual facts with normative justifications (Scavenius 2019). From the results of this study it is clear that a divide between needs of rural residents and urban residents is visible, at least in the residents' own perspectives. A low carbon mobility transition in rural areas will raise questions of distributive justice outcomes. In her study on Norwegian and American implicatory denialism, Norgaard adds that while inequalities within nations are relevant, all residents in high carbon economies are in a global perspective priviledged and high contributors to GHG emissions and approaches should therefore both be critical and compassionate (Norgaard 2011: 217).

What I have done so far is to argue that the quest for GHG mitigation in personal transport is a complex task that needs to blend factual and normative investigations.

As already stated, a hypothesis behind the case selection was that if climate change concerns have a role in mobility practices, then it will be more decisive here, given that there are fewer conditions that invites low carbon mobility practices. This case was a high-carbon mobility case as expected, but I was surprised at the high degree of concern among the residents about climate change and what it imposed on them. I expected that if they were concerned, then it would be expressed in low carbon mobility practices, but this was not much the case. This means that climate change concerns' decisive role in mobility practices could not be verified. Johanne, the utility cyclist, exemplified that even though her concerns were a secondary motivation for her low carbon mobility practice, it played a reinforcing role in sustaining it. But they also played a role in reestablishing her actions outside of social norms. Could it then be stated that climate change concerns have a positive effect in an individual perspective (although as a secondary motivation only) – but a constraining effect in a social perspective? Or in other words, might climate change concerns support individual change but not social change?

Through the theoretical explanations in the analysis it became clear that climate change concerns were constrained by social norms of attention, conversation and morality. The residents were uncomfortable with addressing their mobility behavior as a mitigation problem, which illuminates how mobility choices are regarded as a private choice. At the same time a lot of the arguments for the high carbon choice were indignated or resignated explanations about how political, infrastructural conditions left the individual with no real choice. In the analysis I argue that this could be explained as tensions between political and private realms that Arendt conceptualizes as partly caused by liberal ideology. It is beyond the scope to discuss whether this is the right way to explain the case of rural periphery Denmark. But the main claim against individualist approaches to behavioural change that e.g. Shove *et al.* (2012) opposes, is that such a conceptualization is rooted in a neoliberal paternalism ideology, that is concerned with the individual autonomy, at the expense of further interventions (see Thaler & Sunstein 2009 for an elaboration of what libertarian paternalism means to their proposition of nudging, or Doody 2015 for a critique of behavioural theories in general). The work of Peeters *et al.* on individual responsibility in relation to climate change similarly suggests that the strongest motive that conflicts with one's motivation to act according to one's concerns, is the inviolablely dominant liberal-capitalist worldview, where self-interest pursuits are equated with accumulation of wealth and consumption (2015).

As I would like to end the discussion on a positive note, I go back to the question: might climate change concerns support individual change but not social

change? One argument against this lies in the positive role of the concerns in the sustaining of carpooling practices, at least in one of the residents' case. Such an example tells a story of climate change concerns as a reinforcing element in mobility practices, and furthermore that a successful integration of the concerns into social spheres can provide a powerful tool. And it shows that sociological engagements with this topic are relevant.

7 Conclusion

The aim of this thesis has been to increase the understanding of what role individuals' climate change concerns play in their mobility practices.

The role of climate change concerns in the residents' mobility practices was found to vary in terms of actual impact on the practice, but all of the residents expressed some of the norms and struggles that climate change concerns lead to. Based on Norgaard's work (2011), strategies that either legitimate status quo actions or one's own innocence were identified from the interviews with the residents. The strategies that functioned as tools of order were as follows: practicalities prohibited a less carbon intensive mode and usage, mobility choices were discarded from the resident's concern, and they drew on a social narrative of the necessity of car use in rural areas. Strategies that provided tools of innocence were some of the same, since they constrained them from choices because of practicalities of alternative modes, which had the byproduct of making utility cycling culturally incongruent. Technological innovation faith, normalisation of own actions through frames of other paths as idealistic or fanatic were tools available, along with shifting the focus to others' emissions such as flying.

The study concludes that the role of climate change concerns in the residents' mobility practices can be

1) Negative: by imposing struggles on the individual who sees her own concern-action gap; or resignation because her actions are preconditioned by structures out of her scope; or by strengthening identity markers on for instance utility cycling.
2) Positive: when it provides personal satisfaction, which means that even when it is a secondary motivation it has a reinforcing role in sustaining low carbon practices. It also affects car purchases and car usage, although price was more important to some.
3) Neutral: A lot of the relevant aspects of the mobility practices did not have much to do with climate change concerns, such as weather impact, social, digital or economic skills. Strong focus on doable things led to individuals' focus on small-scale sustainability acts, at the expense of attending to their travel behaviour.
4) Potentially positive roles: the analysis suggests that climate change concerns could have positive impacts on mobility practices by being successfully connected to larger societal structures, because the

> frustration of malfunctions or absence of material elements of low carbon mobility is already there; while the morality norms creates an inconvenient role for concerns, changes in what is regarded as political or private could lead climate change concerns to have a strong positive role; this is shown in the carpooling example, where the climate change concerns are successfully connected to an (informal, small-scale) social community and because the practice leads to less helplessness, and less social isolation of the individuals' concerns, such factors were drivers in the sustaining of the practice.

This is an estimate on perspectives that can be helpful in order to understand and consequently act on a climate concern-action gap. Along with it, the study also points to the absence of elements of rural low carbon mobility practices, which is both in terms of under-investment in material infrastructures required, as well as preconditions to develop necessary competences and capture positive meanings associated with low carbon mobility practices.

Although this study is based on a small case study, it provides points of orientation for further studies about transport in rural areas, and it underlines the importance of a sociological understanding of individuals' subjective concerns in relation to their actions.

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References

Anable, J., Brand, C., Tran, M. and Eyre, N. 2012. "Modelling Transport Energy Demand: A Socio-Technical Approach." *Energy Policy* 41: 125-138

Arendt, Hannah. 2006. *Between past and future: Eight exercises in Political Thought.* New York, NY: Penguin Books

Arendt, Hannah. 1989. *The Human Condition.* Chicago, IL: The University of Chicago Press

Arendt, Hannah. 1965. *On Revolution*. New York, NY: Penguin Books

Banister, David. 2008. "The sustainable mobility paradigm." *Transport Policy* 15 (2): 73-80

Bhaskar, R. 2010. "Contexts of interdisciplinarity: interdisciplinarity and climate change." In R. Bhaskar, C. Frank, G Hoyer, P. Næss, J. Parker (eds) *Interdisciplinarity and Climate Change*, London: Routledge: 1-23

Bhaskar, R. 1998. *The Possibility of Naturalism – a philosophical critique of the contemporary human sciences.* UK: Taylor & Francis Ltd.

Bryman, A. 2008. *Social Research Methods* (3rd ed.). Oxford University Press.

Cohen, Stanley. 2001. *States of Denial: Knowing about Atrocities and Suffering.* Cambridge, MA: Polity Press

Collier, A. 1994. *Critical Realism: An Introduction to Roy Bhaskar's Philosophy.* NY: Verso

Cresswell, T. and P. Meriman. 2011. *Geographies of Mobilities: Practices, Spaces, Subjects*, Aldershot: Ashgate

Danmarks Statistik. 2017. "Familiernes bilrådighed 1. Januar 2017." *Nyt fra Danmarks Statistik,* 4. Juli 2017, Nr. 282 https://www.dst.dk/Site/Dst/Udgivelser/nyt/GetPdf.aspx?cid=19493 [Accessed 14 may 2019]

Doody, B. J. 2015. *The low carbon commute: Rethinking the habits that connect home and work in Auckland and London through John Dewey's pragmatism.* Durham: Durham University. Available at Durham E-Theses Online: http://etheses.dur.ac.uk/11583/ [Accessed February 13, 2019]

European Commission. 2018. *In-depth Analysis in support of the Commussion Communication Com (2018) 773: A Clean Planet for all – A European long-term strategic vision for a prosperous, modern, competitive and climate neutral economy.*

Flyvbjerg, Bent. 2006. "Five Misunderstandings About Case-Study Research." *Qualitative Inquiry* 12 (2): 219–245

Friman, M., Edvardsson, B., Gärling, T. 2001. "Frequency of negative critical incidents and satisfaction with public transport services." *Journal of Retailing and Consumer Services* 8 (2): 95-104

Johansen, P. H. & Chandler, T. L. 2014. 68 landsbyer 5 år efter. *Danish Centre for Rural Research and Development (CLF), University of Southern Denmark. CLF Report 30/2014*

Johansen, P. H., Jørgensen, A. G., Mærsk, E., Randløv, H. R. 2016. "SMART transport på landet – en undersøgelse af nye transportinitiativer, der forbinder land og by og lokalsamfund i landdistrikterne." *Danish Centre for Rural Research and Development (CLF), University of Southern Denmark. CLF Report 54/2016*

Giddens, A. 1984. *The Constitution of Society: outline of the Theory of Structuration.* California: University California Press

Givoni, M. and David Banister. 2013. *Moving towards low carbon mobility.* Cheltenham: Edward Elgar Publishing Limited

Gramsci, Antonio. 1973. *Prison Notebooks*. London: Lawrence & Wishart

Hargis, Jill. 2016. "Hannah Arendt's turn to the self and environmental responses to climate change paralysis." *Environmental Politics* 25(3): 475-493

Jackson, T. 2005. *Motivating Sustainable Consumption: a review of evidence on consumer behaviour and behavioural change. A report to the Sustainable Development Research Network* (sponsored by DEFRA). https://timjackson.org.uk/wp-content/uploads/2018/04/Jackson.-2005.-Motivating-Sustainable-Consumption.pdf [Accessed march 24, 2019]

Kent, Jennifer L. and Robyn Dowling. 2013. "Puncturing automobility? Carsharing practices." *Journal of Transport Geography* 32: 86-92

Kollmuss, A. and Agyeman, J. 2002. "Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behaviour? *Environmental Education Research* 8: 239-260

Kvale, S. and Brinkman, S. 2015. *Interview. Det kvalitative forskningsinterview som håndværk* (3rd ed.). Copenhagen: Hans Reitzels Forlag

Kvale, S. and Brinkman, S. 2009. *Interview. Det kvalitative forskningsinterview som håndværk* (2nd ed.). Copenhagen: Hans Reitzels Forlag

Larsen, J. 2017. "The making of a pro-cycling city: Social practices and bicycle mobilities." *Environment and Planning A* 49(4): 876-892

Lucas, Karen. 2004. *Running on Empty: transport, social exclusion and environmental justice.* Bristol, UK: The Policy Press

Luker, Kristin. 2010. *Salsa Dancing into the Social Sciences: Research in an age of info-glut.* Cambridge, MA, London, UK: Harvard University Press

Lofland, J. and Lofland, L. 1995. *Analyzing Social Settings: A Guide to Qualitative Observation and Analysis* (3rd ed.). California: Wadsworth

Macionis, John J. and Plummer, Ken. 2002. *Sociology: a Global Introduction.* 2nd edition. Essex: Pearson Education Limited

Mattioli, G. 2016. "Transport needs in a climate-constrained world. A novel framework to reconcile social and environmental sustainability in transport." *Energy Research & Social Science* 18: 118-128

Norgaard, Kari Marie. 2018. "The sociological imagination in a time of climate change." *Global and Planetary Change*. 163: 171-176

Norgaard, Kari Marie. 2011. *Living in Denial: Climate Change, Emotions, and Everyday Life.* Cambridge, MA: MIT Press

Nussbaum, Martha. 2013. *Creating Capabilities: The Human Development Approach.* Cambridge: Harvard University Press

Peeters, W. et al. 2015. *Climate Change and Individual Responsibility: Agency, Moral Disengagement and the Motivational Gap.* Basingstoke: Palgrave Pivot

Popper, S., 2012. "Transport and Mobility Choices in 2050*."* In: *Living in a Low-Carbon Society in 2050* Edited by Horace Herring, 60-74. UK: The Open University

Redman, L., Friman, M., Garling, T., Hartig, T. 2013. "Quality Attributes of Public Transport that attract Car Users: a Research Review." *Transportation Policy* 25: 119-127

Rietveld, P. 2005. "Six reasons why supply oriented indicators systematically overestimate service quality in public transport." *Transport Reviews* 25 (3): 319-328

Robbins, P. 2012. *Political Ecology: A Critical Introduction* (2nd ed.). Malden, Oxford, Chisester: Wiley-Blackwell

Røpke, I. (2009): "Theories of practice – new inspiration for ecological economic studies on Consumption." *Ecological Economics* 68: 2490-2497

Scavenius, Theresa. 2019. "Fact-sensitive political theory," *Critical Review of International Social and Political Philosophy* 22(1): 5-17

Schwanen, T., Banister, D. & Anable, J., 2012. "Rethinking Habits and their Role in Behaviour Change: the Case of Low Carbon Mobility." *Journal of Transport Geography* 24: 522-532

Sen, Amartaya. 2000. *Social Exclusion: Concept, Application and Scrutiny. Social Development Papers no. 1.* Manila: Asian Development Bank

Shove, E. 2010a. "Beyond the ABC: Climate Change Policy and Theories of Social Change." *Environment and Planning A* 42 (6): 1273-1285

Shove, E. 2010b. "Theory, Culture & Society." *SAGE*, Los Angeles, London, New Delhi, and Singapore, 27(2–3): 277–288

Shove, E., Pantzar, M., Watson, M. (2012). *The Dynamics of Social Practice: Everyday Life and how it matters.* London: SAGE

Sims R., R. Schaeffer, F. Creutzig, X. Cruz-Núñez, M. D'Agosto, D. Dimitriu, M.J. Figueroa Meza, L. Fulton, S. Kobayashi, O. Lah, A. McKinnon, P. Newman, M. Ouyang, J.J. Schauer, D. Sperling, and G. Tiwari. 2014. "Transport." In: *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Edenhofer, O., R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Savolainen, S. Schlömer, C. von Stechow, T. Zwickel and J.C. Minx (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter8.pdf [Accessed march 24, 2019]

Simcock, N. and Mullen, C. 2016. "Energy demand for everyday mobility and domestic life: Exploring the justice implications." *Energy Research & Social Science* 18: 1-6

Spangenberg, J. H. and Lorek, S. 2002. "Environmentally sustainable household consumption: from aggregate environmental pressures to priority fields of actions." Ecological Economics 43 (2-3): 127-140

Steffen, W. et al., 2018. Trajectories of the Earth System in the Anthropocene. *Proceedings of the National Academy of Sciences of the United States of America,* 115(33), pp. 8252-8259

Steinbach, R., Green, J., Datta, J. et al. 2011. "Cycling and the city: A case study of how gendered, ethnic and class identities can shape healthy transport choices." *Social Science & Medicine* 72(7): 1123-1130

Stern, N., 2007. *The Economics of Climate Change, The Stern Review,* Cambridge: Cambridge University Press

Spotswood, F., Chatterton, T., Tapp, A., Williams, D. 2015. "Analysing cycling as a social practice: An empirical grounding for behaviour change." *Transport Research Part F* 29: 22-33

Sundblad, E-L., Biel, A. & Gärling, T., 2014. Intention to change activities that reduce carbon dioxide emissions related to worry about global climate change consequences. *Revue européenne de psychologie appliquée,* 64 (1): 13–17

Swidler, Ann 1986. "Culture in Action: Symbols and Strategies." *American Sociological Review* 51: 273-286

Thaler, R. and Sunstein, N. 2009. *Nudge: improving decisions about health, wealth and happiness.* London: Penguin

Urry, J. 2013. *Societies Beyond Oil: Oil Dregs and Social Futures.* London: Zed Books Ltd.

Watson, M. 2012. "How Theories of Practice can inform Transition to a Decarbonised Transport System." *Journal of Transport Geography* 24: 488-496

Cited newspaper articles:

Gross, N. 2018. "The Class Divide on Saving the Planet." *The New York Times,* December 16, Section SR, Column 0, Sunday Review Desk, 2

Poirier, Agnès C. 2018. "A Movement Made for the Macron Era." *The New York Times,* November 29, Section A, Column 0, Editorial Desk, 27

Dolsak, N. and Prakash, A. 2018. "Can the Climate Movement Survive Populism? Lessons from 'Yellow Vest' Protests." *The Hill* [Online], 6 December, retrieved march 28th 2019, https://thehill.com/opinion/energy-environment/419953-can-the-climate-movement-survive-populism-lessons-from-yellow-vest

Webpages

EEA (European Environmental Agency). 2019. "Progress of EU transport sector towards its environmental and climate objectives." https://www.eea.europa.eu/themes/transport/term/term-briefing-2018 [Accessed april 25th 2019]

EEA (European Environmental Agency). 2018. "Greenhouse gas emissions from transport."

https://www.eea.europa.eu/data-and-maps/indicators/transport-emissions-of-greenhouse-gases/transport-emissions-of-greenhouse-gases-11?fbclid=IwAR1cbGsgWfQZg8qh0FW3VcH_0meqfyVLIz0YjmTM_ISmAZyqR5LZxHI3n7o [Accessed may 20th 2019]

Efkm (Energi- Forsynings- og Klimaministeriet), 2019. "Ny analyse: Danskerne bakker massivt op om den grønne omstilling." https://efkm.dk/aktuelt/nyheder/2019/apr/survey/ [Accessed april 25th 2019]

Nordjyllands Trafikselskab. 2019. "Plustur." https://www.nordjyllandstrafikselskab.dk/Flextrafik/Plustur [Accessed may 14th 2019]

Norstat. 2019. "Norstat at a glance." https://efkm.dk/media/12719/resultat-af-survey-om-danskernes-holdning-til-klimadilemmaer.pdf [Accessed april 25th 2019]

Vejdirektoratet. 2015. "Håndbog: Kollektiv Bustrafik og BRT. Høringsudgave." http://www.vejdirektoratet.dk/DA/vejsektor/vejregler-og-tilladelser/vejregler/h%C3%B8ringer/Documents/H%C3%B8ringer%202016/Kollektiv_trafik_H%C3%B8ringsudgave.pdf?fbclid=IwAR34JjgTpilnTxBcGwXw-j7m11vpaJiRS1I-Flyqlrtxc26yBDaMBP961B0 [Accessed may 5th 2019]

Appendices

Appendix A

Interviewguide

Note that this is a translation of the original danish interviewguide, and that the interviews were only semi-structured.

Introduction

- Introduce myself and thesis subject
- Outline what the participant's involvement will be in the project and their rights. Ask them if it is ok to have the interview recorded.

Living in XX village

- How long have you been living in XX?
- How do you find living living here?
- Do you think your lifestyle is different from your neighbours?
- Where did you grow up?
- Has your transport needs changed much the last 10 years?
- How is it to get around in XX?

Everyday life

- How did you get to live in this house?
- Do you live with anyone? Who?
- If you think back on the last week, can you describe your transport use for me? (in terms of how you travelled and where you went?)
- Apart from your trips this week, when do you otherwise need transport?
- Does your transport mode vary sometimes?

Preparing for the trip

- Do you have a routine that you go through in the morning?
- How does your routine fit with others in the house?
- How do you decide what to wear?
- Do you take into consideration the weather?
- How do you know what the weather is like?
- Do you have a dress-code at work?
- What do you need to carry with you?

The trip out

- Can you talk me through your trip?
- What do you do on the trip?
- Do you interact with people on the trip?
- How do you find cycling/walking in XX?
- Does your trip change with the weather / different times of the year?
- What does a normal work day involve for you?

The trip home

- Do you have a routine to finish up your day at work?
- Do you do anything different on the commute home?
- Do you have a routine that you go through when you arrive home?
- How do you experience/perceive your trip? (tiring, nice etc.?)
- What would the ideal trip look like for you? (Mode, distance etc.?)

Public transport services

- Are you familiar with which public transport services that are accessible in your area?
- Do you use public transport – and when?
- How do you experience using public transport?
- Do you know who use the services?
- Do you think the services should be different?

- What should be different? (frequency, transport mode, flexibility, price, reliability, transparency etc.?)
- Are ther something you think is missing, in terms of infrastructure, from your location?

Climate change and sustainability

- When someone mentions the phrasing 'sustainability', what do you think they mean?
- Does sustainability play a role in your day to day life?
- Do you think about climate change? (When?)
- Does it concern you? (Why, why not?)
- Do you think about sustainable transport in your everyday life?
- How sustainable do you find your transport mode(s)?
- Is there something that concerns you about using the car too much?
- Why do you bike / drive / bus?

Is there anything else you think I should know? About rural travel, or climate change concerns?

Appendix B

The quotes from the analysis in original language (Danish)

"Jeg kan huske i 1.g at jeg var træt af at skulle spørge, også fordi jeg ikke havde gjort det før, og jeg vidste ikke om det bare var mig." (Jacob)

"Selvom jeg synes selv jeg er meget miljøbevidst, ikke, men det er rarest at bruge bil, men jeg kæmper lidt mere for det i vinterhalvåret." (Jacob)

"Jeg er meget omhyggelig med at når jeg fortæller at vi cycler, så skynder jeg mig at sige: det er jo en elcykel, ikke, sådan så der ikke kommer bagholdsangreb

- *Hvorfor?*
- *Jamen, fordi folk ikke skal få den, altså jeg er jo ikke nogen helt, det er jo ikke derfor jeg cycler vel, jeg cycler fordi, ja for det første fordi jeg synes det err art at cycle og for det andet fordi jeg er noget bevidst om, hvad der foregår I verden omkring mig, jeg behøver ikke at bidrage til at mine børnebørn ikke har nogen ordentlig tilværelse, nå ja, jeg ved ikke om det har nogen indflydelse, men hvis jeg kan gøre noget selv, for hvis ikke enkeltpersoner kan gøre noget ved det, hvem kan så, altså sådan en bevægelse skal starte nedefra for at den har gennemslagskraft." (Johanne)*

"Jeg kan blive helt sådan, næsten fysisk dårlig, ved at tænke på at hvis vandet slipper op – så kan vi ingenting, vi kan ikke leve uden vand, og så sviner vi med den nu." (Johanne)

"Ja, altså jeg prøver så vidt muligt at tænke på det, men det er nok ikke så meget, jeg kan tænke på det, fordi jeg tror jeg kommer til at, altså hvis jeg kunne, så ville jeg jo cykle hver dag til Hjørring, så ville jeg cykle hver gang, men altså så tænker jeg også bare, at det gider jeg ikke, men altså, jeg tænker helt klart at det er noget, der fylder i mine tanker og at det, hvad skal man sige, at da mine forældre skulle købe ny bil, så sagde jeg også lige, at de skulle tænke over hvad de køber, så de ikke bare køber en gammel bil, der bare kører ingenting på literen, men altså jeg er ikke så meget inde i det, inde i sådan noget, ja det med bæredygtighed og klima, men altså …

- *Er det fordi du ikke interesserer dig for det, eller fordi det ikke passer til det liv du lever?*
- *Jeg tror at det er fordi jeg ikke helt har forstået det, altså jeg har ikke rigtigt sat mig ind i det, det er mere det." (Magnus)*

"Men det er jo deres liv, jeg skal ikke fortælle dem, hvordan de skal leve det, det skal jeg være den allersidste til at gøre, men jeg bemærker, hvordan de synes at det er fedt at jeg har skrottet alle de fiberklarklude og strikket karklude, sådan nogle små ting, og hvor de siger, at det vil vi også gerne have, fint, så har jeg strikket til

- *Men kan du godt sige til dem at du ikke synes at de skal flyve på ferie?*
- *Nej*
- *Det siger du ikke til dem?*
- *Det ved de jo, altså jeg kan jo se, at de læser Tænk, de ved det jo godt."(Johanne)*

"Jamen, jeg tænker lidt at vi vælger hver vores form for bæredygtighed, altså nogen siger at det skal være, at ting skal være økologiske f.eks. , og nogen siger at det skal være biodynamisk, og jeg hører til dem hvor jeg tænker, at jeg synes, der er noget bæredygtigt i at det er europæisk, at jeg foretrækker gulerødder og hvidkål og rodfrugter i stedet for sojabønner og avocadoer om de er nok så økologiske, selvom de kommer langvejs fra, og jeg tænker, at vi så på den lange bane kunne have glæde af, at få flere ting der var lokale, og det gælder så også transport, at vi i vores nærmiljø, for opfyldt de behov vi har, fordi vi nu både skal spise og drikke og transportere os."(Lone)

"Altså vi har en bil, ikke, der står herude, den går 15 km pr. Liter, og hvis vi skal til København, så kører vi sgu til København, og hvis vi skal et eller andet sted hen så kører vi altså, vi står ikke sådan og spekulerer på om vi måske kunne tage toget, så sparer vi nok lidt CO_2." (Kaj)

"Vi er ikke rendyrkede eller fanatiske, det vil jeg ikke sige, men jeg vil sige at vi tænker meget på det." (Astrid)

"Det er jo CO_2 op i atmosfæren for min egen fornøjelse og mageligheds skyld, for jeg bliver lige nødt til at køre ned i mit sommerhus, men så flyver jeg ikke verden rundt, så det er jo ligesom alle andre at de finder deres undskyldninger og så (...) fordi man må finde den måde man kan sno sig på, ikke også? Den sorte bil, det er sådan en Citroen Caktus og den går sådan set en 25-26 km på literen." (Lone)

"Jeg tør, altså nogen gange så tør jeg simpelthen ikke at gå ud. Så jeg kører faktisk ind til Hjørring for at gå en tur i en skov. Det er jo ikke smart, det er jo tosset. Simpelthen så tosset. (Caroline).