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The effect of values, barriers and social norms on climate-friendly behaviour

Margarita Muromskaya
Master of Science in International Environmental Studies

Declaration

I, Margarita Muromskaya, declare that this thesis is a result of my research investigations and findings. Sources of information other than my own have been acknowledged and a reference list has been appended. This work has not been previously submitted to any other university for award of any type of academic degree.

Signature.....

Date.....

"I used to think that top environmental problems were biodiversity loss, ecosystem collapse and climate change.

I thought that thirty years of good science could address these problems. But I was wrong. The top environmental problems are selfishness, greed and apathy...

...and to deal with these we need a cultural and spiritual transformation - and we scientists don't know how to do that."

- James Gustave Speth

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I've also been lucky to have the support of my family and friends. They never stopped believing in me.

Lastly, I want to thank for the opportunity these studies have given me. I got the chance to push myself, expand my limits and grow academically, but also emotionally and mentally. It has been a great journey.

Abstract

In this study I have explored the value-behaviour gap of young people (18-29 years) living in Oslo and Akerhus (Norway). The intent was to understand whether those who perform more climate-friendly behaviour have different values from those who do perform less such actions. I also wanted to discover the barriers of climate-friendly behaviour and how the norms and actions of friends and family influence one's personal actions. This was done through a quantitative research where I interviewed twenty participants. The framework used to analyse barriers was based on barriers identified by Blake (1999). The study has also elements of quantitative research. Values were quantified through Schwartz' value orientations (2007). The participants were divided into three categories based on the actions they performed to reduce their carbon footprint. I found that participants who perform the least amount (classification I) have the least values within the self-transcendence orientation. They also have less friends and family that perform environmentally friendly behaviour. The biggest barrier identified was, however, also the influence of friends and family, especially in regard to meat consumption and air flights.

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1. Introduction

1.1 Problem statement

One of the main environmental issues the human kind is facing today is climate change, and there is an overwhelming consensus amongst climate researchers that this is caused by human activities like burning of fossil fuels and deforestation. Some of the consequences, as increase of health risk, damage to infrastructure and decrease in food security are already being felt in certain parts of the world and are predicted to increase if global warming is not halted. It is also predicted that globally, as many as 200 million people can be forced to migrate within 2050 (Brown 2008). Some of the adverse effects on biodiversity include coral reefs being bleached and some land areas experiencing more frequent wildfires (Ainsworth et al. 2016; Mollicone et al. 2006). Even though this issue has been a hot topic in media the last year, to a big degree due to efforts by the young environmental activist Greta Thunberg, it is certainly not the first time it has blown up. As early as 1957 researchers started observing limits of the oceans ability to absorb carbon dioxide (CO₂), and that the excess would move to the upper atmosphere. A significant rise of atmospheric CO₂ was also predicted (Revelle and Suess 1956). Later Charles David Keeling created the keeling curve showing a steady increase of atmospheric CO₂ (Harris 2010). An increase in global temperatures was also discovered and connected to the growing levels of CO₂ (Sawyer 1972). Eventually the concern over the global climate also reached the arena of international politics; in 1979 the inaugural World Climate Conference found place in Geneva, in 1989 the World Meteorological Organization and the United Nations Environmental Programme established the Intergovernmental Panel on Climate Change, and in 1997 the Kyoto protocol entered into force. During the Paris Climate Conference in 2015 it was agreed to pursue the goal of keeping global warming well below 2 °C Celsius (compared to pre-industrial levels) and try to limit the increase to 1,5°C (Vatn 2010).

However, despite all the efforts to decrease global CO₂ emissions, the concentrations keep reaching new records, surpassing 400 ppm (NASA n.d.), which is 50% above pre-industrial levels, meaning that more and more drastic actions must be done to reach the goal. People holding a technocentric view have faith in that the issues we are facing will be solved with technological change. Many writers ascribe this and other traditional values, attitudes and beliefs of the western societies as the main drivers and perpetuators behind the environmental problems. Pirages and Ehrlich (1974) suggested the concept of “dominant social paradigm”

(DSP). It is a worldview where growth and prosperity are the ultimate goals, and are achieved through economic growth and free markets, limited governmental interruption and private property rights. Contrasting this is Dunlap's New Environmental Paradigm (NEP), and the New Environmental paradigm Scale (NEP scale), an instrument to measure transition of a population from DSP towards NEP (Dunlap and Liere 1978; Dunlap et al., 2000).

The change needed to move societies to a more sustainable state can and must happen on different levels or arenas: politically, in firms, societies, communities, households and in individuals. This is reflected in the different approaches used by researchers. Some research has a psychological approach where individual behaviour is emphasized (Pickett-Baker and Ozaki, 2008; Caird et al., 2008; Ozaki and Sevastyanova, 2011). Others have used sociological models with a broader approach including the effects of the society and institutions (Blake, 1999; Agyeman and Angus, 2003; Shove, 2010). Some researchers have looked at environmental beliefs (Kilbourne and Pickett, 2008; Collins et al., 2007), some have looked at environmental norms (de Groot and Steg, 2007; Stern et al., 1999) and some at attitudes (Gooch, 1995; Becker et al., 1981). Some have focused at what drives environmentalism (Caird et al., 2008), others have looked at the barriers, social influence and government policy (Ozaki, 2011; Niemeyer, 2010; Caird et al. 2008). The insights and understanding of pro-environmental behaviour provided by all this research is an important step towards providing policy makers with suggestions on which interventions would be the most effective.

1.2 Purpose

Mitigating climate change may happen through political action – i.e., introducing various policy measures to change the behaviour of firms and households/individuals. However, it may also happen because of voluntary action among people. My interest is in the latter. In this paper I intend to enhance our understanding of what may explain climate relevant behaviours among young people. It is interesting to know whether individuals performing climate friendly actions have other values than those who do not perform such actions. Holding pro-environmental values may not materialize in practice. There may be various barriers involved, and it is of interest to know how these influence what people do. At last, it is recognized that social influence can promote or hinder pro-environmental behaviour. Better insight into such dynamics is warranted.

This research was conducted as a contribution to ACT, a project by Center for International Climate Research (CICERO n.d). The purpose of the project is to increase the understanding of how individuals and households respond to different political climate measures. The guiding questions of the ACT project are:

- How can new instruments be designed to achieve public acceptance and to reduce emissions?
- What is the relevance of individual characteristics and contextual factors for responses to climate policy instruments?

The focus of my study has been on young inhabitants of the regions Oslo and Akershus (Norway), and specifically those who accept that climate change is anthropogenic and to some degree have interest in the matter. I based my research on some of the findings ACT has done thus far (see Method). With a qualitative method I tried to look deeper into the matter.

1.3 Research questions

Based on the above, the following research questions have been formulated:

RQ 1: *Are personally held values and norms important for personal engagement in behaviour that reduces greenhouse gas emissions?*

One might assume that having strong values regarding the environment, but also more altruistic values in general will lead to more engagement in reducing one's carbon footprint. However, there may be a series of barriers that may hinder a well-intended individual to act on the basis of her/his values:

RQ 2: *What are the barriers for behaviour that reduces greenhouse gas emissions?*

RQ 2.1: *What are the practical barriers?*

RQ 2.2: *What are the personal barriers?*

RQ 2.3: *What are the social barriers?*

Finally, I want to explore how climate positive behaviour can be supported and promoted by one's friends and family.

RQ 3: *How do social norms promote engagement in behaviour that reduces greenhouse gas emissions?*

1.4 Structure of the thesis

In chapter 2, I offer further background information to this thesis. Thereafter, I present its theoretical basis and the methodological considerations underlying data collection and analysis. Next, I present and discuss the findings. The thesis end with a conclusion organized as a response to each research question. Added to the reference list, I also have a number of appendices – i.e., appendix 1 and 2 summarizing data from interviews and appendix 3, the interview guide.

2. Background

In 2016, through the project 'European perception of climate change' (EPCC) (Arnold et al. 2016), it was revealed that to almost 60 % of Norwegians being environmentally friendly is an important part of their Norwegian identity. Norwegians take a pride in «the image of Norway as being a very nature oriented and sustainable country» (ibid). In another research conducted in Norway eight out of ten showed interest in sustainability and social responsibility (Mortensen 2019). Despite this self-image and these findings, the amount of greenhouse gases released has continued rising. In 2012 every household released on average 22,3 tonnes CO₂-equivalents, which is 25% more than in 1999 (Steen-Olsen 2015). A report shows that the number of flights in Norway increased from 18,6 million in 2005 to 37,5 million in 2016 (Kristiansen, 2017). This means there is a big potential for reduction of carbon emissions at household level through a change of behaviour.

The discrepancy between people's stated concern and ever-growing emissions of CO₂ has been targeted by many researchers and been given many different names: attitude-behaviour gap, intention-behaviour gap or belief-behaviour gap (Kollmuss and Agyeman 2002; Rogers 2003; Godin et al 2005; Blake 1999). The first models were linear rationalist models based on assumptions that environmental knowledge would lead to pro-environmental behaviour and were called information deficit models of public understanding and action (Kollmuss & Agyeman 2010). A lot of campaigns, policies by governments and NGOs have been based on these types of models when trying to close the gap, and still are. Unfortunately, research shows that usually this does not lead to pro-environmental behaviour (ibid).

Blake (1999) concludes that approaching the matter by using information-deficit and rational choice models of human behaviour will not suffice. He notes that political initiatives such as Go for Green in the UK fail to acknowledge the complex relationship between individuals and socioeconomics that characterize the relationship between environmental concern and action, and that "purely cognitive or social-psychological theories of decisions fail to take account of cultural, institutional and structural constraints on people's capacity and willingness to take action". From his own work, Blake concludes that numerous old theories "often fail to incorporate structural and institutional arrangements that enable or constrain individual environmental action" (265). Furthermore, he points out there must be more discourse between the individuals and political institutions, and policies must consider "the everyday

contexts in which individual intentions and actions are constrained by socioeconomic and political institutions¹” (Blake 1999: 274).

Since Blake's exploration of information-deficit many other approaches and explanations of barriers have been suggested.

These barriers can be separated into several categories: psychological, social, financial and structural. Gifford (2008) differentiates seven different psychological barriers: “limited cognition about the problem, ideological worldviews that tend to preclude pro-environmental attitudes and behaviour, comparisons with key people, sunk costs and behavioural momentum, discredence toward experts and authorities, perceived risks of change, and positive but inadequate behaviour change”. These barriers can be categorized as internal. Social barriers² reflect the fact that people are social beings and exist in a context of social norms. This means that the actions of an individual are influenced by surrounding people. Economic barriers are the lack of funds to invest in sustainable alternatives. Structural barriers are large-scale systematic barriers. It includes poor organizational and governmental action and lack infrastructure that enables pro-environmental behaviours.

¹ Blake uses the concept of political institutions in the meaning of political actors at the level of the state.

² Overlaps with Gifford's barrier social comparison

3. Theoretical framework

In this thesis, I will apply different frameworks. The barriers of climate friendly behaviour were adapted and adjusted from Blake (1999). I have also drawn on theories from environmental psychology and sociology. It's goal is to understand people's actions - especially what motivates or does not motivate environmentally friendly behaviour. One way to approach environmental psychology is by viewing it as a combination of self-interest (for example minimizing personal health risk) and concern for others (including nature, next generations, other species) (Bamberg and Möser, 2006). Researchers that assume self-interest to be the driving force of action will often use rational choice models like Theory of Planned behaviour (TPB, Ajzen 1991). Researchers who take a more pro-social approach are likely to use theories like the Norm-Activation-Theory (NAT, Schwartz and Howard 1981) or the Value-Belief-Norm-Theory (VBN, Stern 2000). In the following, I will introduce these theories.

3.1 Barriers

The categories of barriers used in this paper were inspired by Blake's study (1999). Based on the responses from the participants of his study he created a diagram (Figure 3.1). It illustrates the different barriers of environmental actions identified by the participants. The barriers were grouped into three different categories: individuality, responsibility and practicality. Individuality refers to personal attitudes such as laziness, lack of interest or viewing oneself as the wrong type of person. This barrier was renamed to personal barrier. Responsibility refers to social factors that influence how people view environmental actions. I called it social barriers in this paper. The last set of barriers, practicality is concerned with the set of barriers disable pro-environmental behaviour regardless of someone's attitudes or intentions. The barrier is absolute. Examples are lack of time, money, information, encouragement, and facilities. These barriers were called practical in my study.

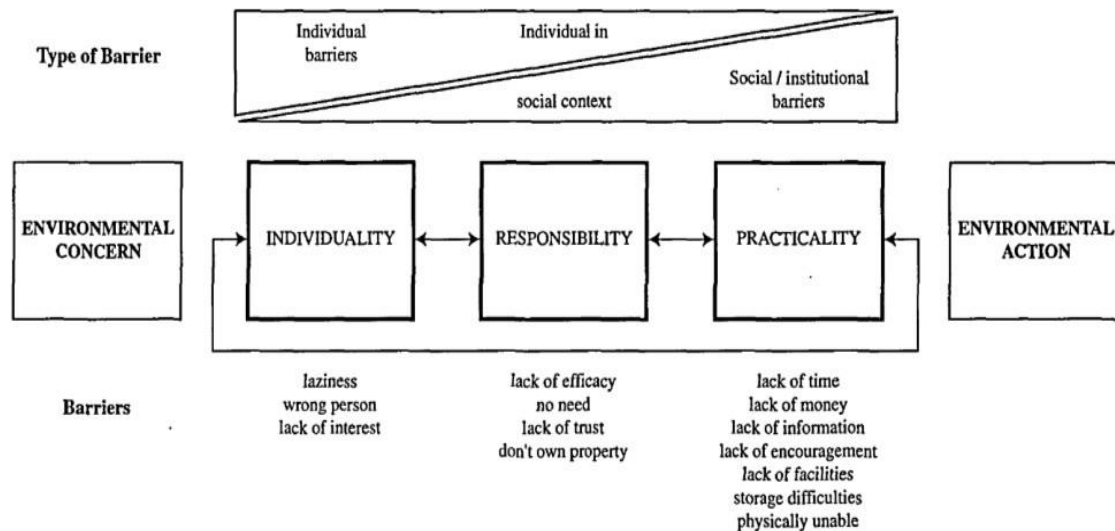


Figure 3.1: Barriers between environmental concern and action.

Source: Adapted from Blake (1999)

3.2 The theory of planned behaviour

The TPB (see Figure 3.1) was proposed by Ajzen in the early 1990s. It is a general model of deliberate behaviour based on a hedonic view of humans. It assumes that avoiding punishment and seeking reward is what motivates people's actions. In this theory, attitude (whether the behaviour is seen as positive or negative), subjective norm, together with and perceived behavioural control are the key predictors of behavioural intention, which, in-turn predicts the behaviour. According to this theory, a behaviour will be performed if the actor has a positive attitude towards the action, if relevant other people are perceived to expect and support the action, and if the actor perceives themselves as being able to perform the action and implement their intention. Attitude is here a general measure of the favourability of the action for the actor. Subjective norms can be thought of as social pressure and the willingness to comply to that pressure. Fear of being excluded is the major driver for people to fulfil social norms. Finally, perceived behavioural control tries to measure to which degree the actor has the opportunity and ability to perform a certain action. All three determinants are subjective representations, meaning that the perceived control does not necessarily have to be the same as actual control people have, or that the subjective norm is not necessarily reflecting what people actually expect.

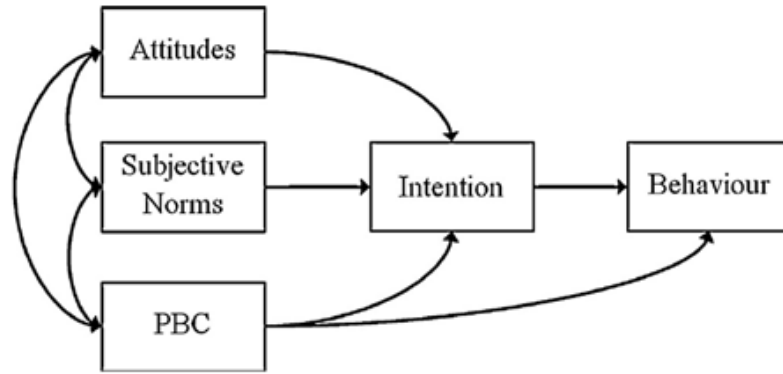


Figure: 3.2: The theory of planned behavior

Source: Adapted from Ajzen (1991)

One strand of critique directed at this theory is that it does not reflect the impact of morality on environmentally friendly behaviour and that it is not applicable for repeated behaviour (e.g. in Klöckner and Blöbaum).

3.3 The norm-activation-theory

Unlike the TPB which can be applied to behaviours in general, the norm-activation-theory (NAT) (Figure 3.3) is used specifically to target altruistic behaviour. The authors of this theory, Schwartz and Howard wanted to create a model that predicts the conditions that prompt people to help others. The main assumption behind this theory is that personal norms are the determinants of a behaviour. This means that people will act if they feel a moral obligation in the given situation. The authors refer to this state as activation of personal norm. The norm is not always activated, but can be if the actor perceives a need of help, and hence action. According to this theory, there are four determinants that affect the activation of a personal norm: (1) the awareness of consequences, (2) ascription of responsibility, (3) subjective norms or the awareness of need for help, and (4) the perception of being capable to perform the helping action. As pointed out by Klöckner and Blöbaum (2010), NAT has a focus on norms, and fails to properly analyse the role of habits, intentions, attitudes, and situations themselves. They also point out that TBP and NAT are both limited by their failure to incorporate situational influence on people's behaviour to perceived behavioural control.

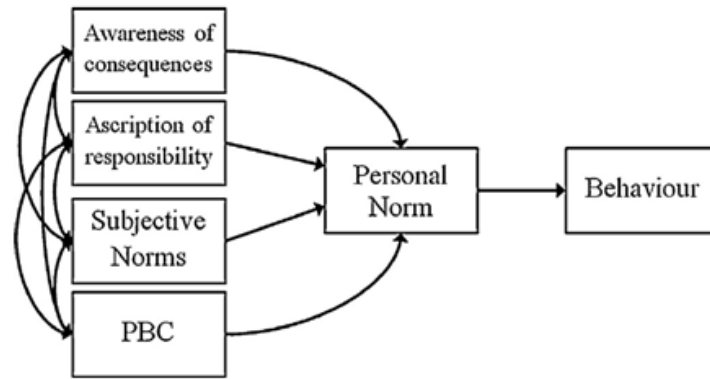


Figure: 3.3: The norm-activation theory

Source: Adapted from Schwartz and Howard (1981)

3.4 The value-belief-norm-theory

With the value-belief-norm-theory (VBN) (2000) Stern tries to tie together NAT theory to connections between general values, environmental beliefs and behaviour. He places the determinants of behaviour into a chain where behaviour is determined by personal norms, which are activated by an ascription of responsibility, which is in its turn come from the awareness of consequences. Values are “deeply rooted abstract motivations” (Schwartz 2007) and linked to the rest of the chain by the New Environmental Paradigm (Dunlap et al., 2000), a theory and instrument that measures the general ecological worldview. A person possessing biospheric, altruistic and self-transcendence values is more likely to have an ecological worldview, unlike someone with egoistic and self-enhancement values.

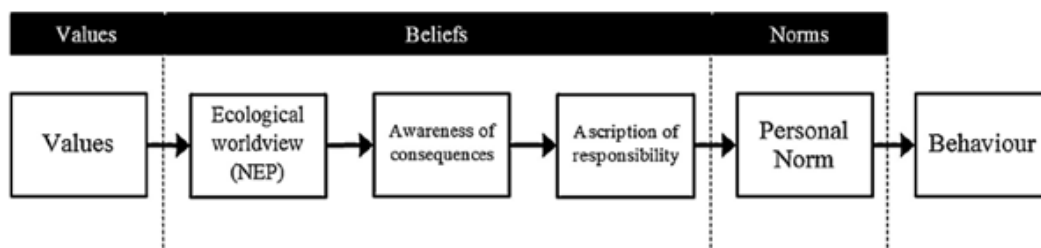


Figure 3.3: The value-belief-norm theory

Source: Adapted from Stern (2000)

3.5 Universal value system

Stern draws upon Schwartz’s (2007) framework on universal value system when specifying the value concept of VBN. This system was developed during the 1990s by professor in social psychology Shalom H. Schwartz. This theory is used as an instrument to measure, explain and

predict attitudes, opinions and actions. In this framework values are defined as “desirable, transsituational goals, varying in importance, that serve as guiding principles in people's lives” (Schwartz 2007: p 267) and are distinguished from concepts like norms and attitudes by their general nature. Norms and attitudes refer to more specific actions. It is claimed that this theory is, with its ten value orientations, able to measure and provide information relevant for any topic. By analysing value theories, questionnaires and work from different cultures, religious and philosophical discussions Schwartz has tried to include core values of all people in the world. The circular diagram (see Figure 3.5) shows the relationship between the different values and the four corresponding overarching orientations. The values are arranged in two orthogonal dimensions: self-enhancement versus self-transcendence, and openness to change versus conservation. This arrangement illustrates the conflicting and congruent relationship between the different values (Schwartz 2007).

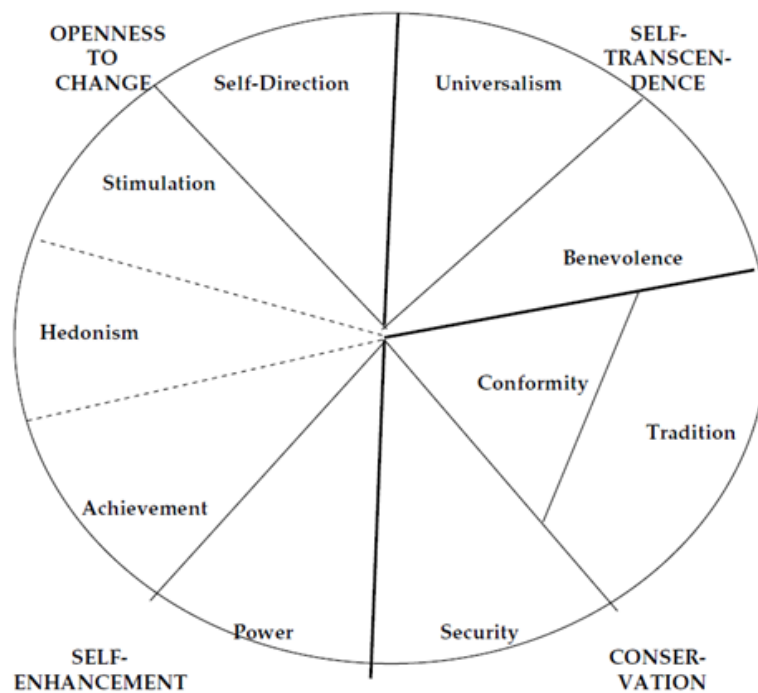


Figure 3.5: Theoretical model of relations among ten motivational types of values.

Source: Schwartz (2007)

Self-transcendence entails acceptance of others as equals and caring for others welfare and is the overarching value orientation for the values universalism and benevolence. Stern (2000) and Stern and Dietz (1994) divide this overarching value further into two dimensions: altruistic

values and biospheric values. Someone with altruistic values will care for others welfare and might protect nature for the sake of humans. People holding biospheric values are concerned about the nature itself. For them nature has an intrinsic value. Opposing of these values, are the values of power and achievement under the overarching value orientation of self-enhancement. (Schwartz 2007). On the change vs. conservation dimension, self-direction and stimulation values oppose conformity, tradition and security.

The method proposed to measure the values is called the Portrait Values Questionnaire. It includes short portraits of different people describing different goals, aspirations, or wishes connected to each of the values. Each of the portraits is formulated as propositions and corresponds to the ten broad human values.

In addition to Schwartz's four overarching orientations, the altruistic and biospheric dimensions are added. Both of them are represented by environmental values.

The three questions from the biospheric domain reflect more situation-specific values. A limitation that might occur here is that these questions might be more sensitive to prevailing conditions. Hedonism is shared by openness to change and self-enhancement (Schwartz 2007).

4. Method

In this chapter I justify the method I used to approach the research questions. I try to reason the different choices that I made, as well as addressing limitations and difficulties that I've faced along the way.

4.1 Strategy

In social research, a qualitative approach allows to go beyond numbers and general trends. It draws information from both human experiences and observations making it possible to analyse both stated and underlying information. The sample size is normally much smaller than it is in quantitative research. By focusing on a smaller amount of cases more dynamics and nuances can be revealed. It is also possible to alter questions along the way, making it a very flexible method. In qualitative research, unexpected responses can be used to add context and explain more about the situation than one would be able to do with numbers alone (Bryman 2016). In addition, there were elements of quantitative research. An adjusted form of Schwartz' Portrait Values Questionnaire (PVQ) was used to get an idea of what values the participants have (more details offered below). This questionnaire was presented to the participants as a part of one-on-one in-depth interviews, a qualitative form of interviews where an interview guide was used to navigate through the interview. It lets the interviewer to stray away from the guide and follow up responses with new questions. This form of interview was chosen because it allows to cover the research questions as well as discovering unforeseen information (Bryman 2016).

As already mentioned, this research is conducted as a contribution to the project ACT. This has in several ways affected the scope, goals and methodology applied in this research. ACT itself is based on an extensive survey - i.e. quantitative research. The results of this survey raised several questions, some of which I wanted to target in more depth by using a more qualitative approach. Data shows that even though young people (18-29 years) are more worried about climate change than other age groups, they have the biggest gap between norms and behaviour in regard to e.g., air flights and consumption of electronics³. I wanted to explore this gap and chose the age group 18-29 years for my research.

³ This information is found in unpublished ACT rapport (personal communication)

Furthermore, Schwartz' adjusted PVQ used in the interviews were taken from ACT survey. The interview guide also included questions about five specific actions. These actions were used because they also are in focus in the ACT survey (more details follow below).

It is also important to mention that there originally was a somewhat different plan for this research. The original plan was to conduct both a round with one-on-one interviews and a second round with group interviews where some participants from the first round brought their friends or family for group interviews. This method would give me more information on how people influence each other's environmental behaviour than what can be easily explored in one-on-one interviews. The interview guide was developed with that purpose in mind. In reality it proved not possible to carry out this second element. When asked in person, several interviewees seemed to be willing to partake in such an activity, but no one came back to me regarding this afterwards. Because of this, the research questions and interview guide had to be adjusted along the way.

4.2 Sampling

For this study I did not want participants on a random basis. They had to be relevant to my research questions. Therefore, I sought those who possess norms of reducing their carbon footprint. Participants were found by distribution an announcement at CICERO's Twitter and Facebook account, my personal Facebook account and by putting up advertising poster with my e-mail in different parts of the Norwegian University of Life Sciences (NMBU). I assumed that followers of CICERO on social media and student of NMBU are above average interested in environmental issues. Furthermore, by focusing on individuals with higher interest in environmental issues, it would be much more likely to find enough participants for group interviews. Again, this was done because of the initial plan.

As already mentioned, the age of the participants was affected by findings of ACT. The sample area was restricted to the counties Akershus and Oslo out of convenience. Having interviews further away would take much more time and be far more expensive.

A large range of sample size is suggested in Bryman (2016). It is mentioned that some authors believe between 20 and 30 will suffice, while some believe that below 60 do not support convincing conclusions. What ultimately determined my sample size was the plausible amount for me to conduct and analyse in the time given. From previous experience, I estimated that 20 would be a maximum. At the same time, I felt like this would give me sufficient amount of data

and theoretical saturation. It is important to point out that purposive sample approach and small sample size does not allow generalizing to a population.

4.3 Interview guide

As suggested by Bryman (2016), when creating the interview guide (Appendix 3), I tried to have open questions. This allowed to explore unforeseen avenues that came up during the process of data collection. But I also wanted the questions to be specific enough to answer my research questions. When exploring barriers of reducing carbon foot print, I could not consider all possible actions. It had to be those that has high effect on reduction of carbon footprint, but also of different engagement level. I chose five actions that were focused on in ACT: reducing food waste, reducing meat consumption, reduce air flights, reduce energy used at home and commute less by car.

I also didn't want to ask leading questions, that is why before addressing the five concrete behaviours from ACT, I would first ask if there are any habits the participants have that reduce their carbon footprint and what their motivations are to perform them. This allowed me to better see the participants level of engagement. Since the sample is Norwegian, the interview guide and the interviews were conducted in Norwegian.

To understand peoples values an adjusted version of Schwartz' PVQ was used. It contained ten portraits (portrait 2-10 and 12) from PVQ (see Table 4.1). It is notable that the original PVQ had 10 portraits. In ACT this was simplified to only use 10 of the original statements to simplify the questionnaire. Following the idea of Stern (2000) an addition of 3 portraits representing more specific environmental values were added (portrait 1, 11 and 13). This was done to better suit the purpose of ACT

Each of the portraits is a description of a person's goals, aspirations, or wishes. For example: "He/she is always looking for adventures and like to take chances. It is important to him/her to have an exciting life" describes a person for whom stimulation values are important. The portraits added represent environmental values, but while there is a biospheric focus of question 11 and 13, question 1 is more concerned with humans and has therefore an anthropocentric focus. For each portrait, the respondent has to choose how similar they feel to the people described in the portraits. They can choose between 7 alternatives: very much like me, like me, somewhat like me, a little like me, not like me, not like me at all and don't know.

Table 4.1: Adjusted version of Schwartz' Portrait Values Questionnaire

PORTRAIT NUMBER	VALUES	PORTRAITS
1	Environmental	He/she strongly believes that people should care for nature. It is important for him/her to ensure sustainability for future generations.
2	Benevolence	It's very important to him/her to help the people around him. He/she wants to care for other people.
3	Power	It is important to him/her to be rich. He/she wants to have a lot of money and expensive things.
4	Achievement	It's important to him/her to be successful. He/she wants people to admire what he/she does.
5	Self-direction	Thinking up new ideas and being creative is important to him/her. He/she likes to do things in his/her own original way.
6	Hedonism	Having a good time is important to him. He/she likes to "spoil" him- /herself.
7	Stimulation	He/she is always looking for adventures and like to take chances. It is important to him/her to have an exciting life.
8	Conformity	It is important to him/her always to behave properly. He/she wants to avoid doing anything people would say is wrong.
9	Tradition	Religious belief is important to him/her. He/she tries to follow the traditions of his/her religion or family.
10	Security	It is important to him/her to live in secure surroundings. He/she avoids anything that might endanger his/her safety.
11	Environmental	He/she strongly believes that people should respect the planet. People should live in harmony with other species.
12	Universalism	He/she thinks it is important that every person in the world should be treated equally. He/she believes everyone should have equal opportunities in life.
13	Environmental	It is important to him/her to prevent pollution. He/she really thinks people should protect natural resources.

Source: Act questionnaire (personal communication)

4.4 Data collection

The first three interviews were carried out early 2019, but the thesis was postponed, so the rest of the interviews happened in September and October 2019. I interviewed in total twenty people, but the value questionnaire of participants 3 got lost, and she was therefore excluded from the analysis. Meeting rooms at CICERO and on campus of NMBU were used to conduct the interviews. Each interview was recorded on a digital voice recorder. To attract interviewees, the participation was rewarded with a 300 NOK gift card.

4.5 Data analysis

4.5.1 Transcribing and coding

The recordings of the interviews were transcribed manually. It was very challenging to decide the level of detail. I ended up transcribing most things said, but not hundred percent. In some cases, I also changed the wording, making it easier to understand when reading, but I tried to keep the context the same. When transcribing the parts where I was asking the questions, I also

wrote down the minutes and second of the recording. This made it easier to find back to the question if I was unsure of the meaning and wanted to relisten.

The transcriptions were coded at the end, after I was finished with interviews and transcriptions. I would not recommend this. I learned a lot on what I could have done better in the interviews while coding, and if I had done it earlier, I would have had the chance to alter some of the questions. The main codes were behaviour (what actions do they perform), barriers (practical, personal and social), influence of family and friends and personal norms (see Appendix 1 and 2).

4.5.2 Scale of environmental behaviour

To analyse if personally held values are important for behaviour that reduces greenhouse gas emissions, a scale was made to classify people's level of engagement. One way to measure engagement in carbon reducing behaviour is by calculating the carbon footprint, a concept based on ecological footprint by William E. Rees and Mathis Wackernagel (Rees 1992, Wackernagel 1994). However, this method requires a lot of quantitative data and would be hard to perform with data gathered in this research. Instead I created a scale specifically catered to the set of data that I collected.

The scale is divided into three classes. The different classes are based on the participants level of action. The scale considers actions that are actually performed by the participants. These actions have the potential to reduce carbon footprint. It is, of course unrealistic to expect someone to know and remember in an interview every action that is climate-friendly compared to its alternatives. Therefore, the scale is based on enquiring about the five actions focused by ACT (reducing food waste, reducing meat consumption, reduce air flights, reduce energy used at home and commute less by car) as mentioned above. Based on their collective habits regarding these actions, I decided that each action could have two states. It was either performed or not. To determine this, I looked at different mechanisms each participant had within the different actions.

In regard to the behaviour of reducing food waste, most participants said in one form or another that they feel like they perform well. The real effectiveness of the actions they claim to perform hard to estimate and compare. They were therefore asked to tell about the actions they use to prevent food waste. The presence or absence of these actions was used to decide on whether they perform the behaviour of reducing food waste. The actions include habits like planning the

meals, having control over what food one already has, using senses to determine if a product is expired rather than expiration date and to freeze down or use the products that are about to expire.

Regarding reduction of meat consumption, the participants were either not limiting themselves at all or had limitations of different degrees. Two participants did not restrict themselves at all. All others had one of these levels of restriction: vegan (no animals products), vegetarian, pescatarian (eats only seafood), eating meat of wild animals only, eating meat when served by others or eating out. When deciding on the participants performance in air flights, I looked at the current state and number of air flights in the past.

The main factor I looked at in regard to reducing energy used at home was if their home was well insulated and what kind of habits they had in regard to heating their apartment, time spent showering and filling up their dish washer and washing machines. Lastly, the easiest to measure was use of car for commuting. They either used it or they didn't.

When drawing the line between categories, to fall in two or three demanded that they performed additional actions not mentioned under the five aspects above. These actions often required more. It includes a more radical change of habit and time spent on that habit, such as dumpster⁴ diving which has to do with the taboo around it and often conflict with legal framework be performed at night. The scale also incorporates the participants influence on friends and family and participation in for example the political party MDG⁵ and environmental organizations. More specifically, each of the classifications were defined as follows:

1. *Aware, but pretty passive*

Participants of this category have on purpose or by chance reduced their carbon footprint in regard to at least three out the five indicators (food waste, meat consumption commuting to work or study, airfares and electric power used to heat the participants home). No other significant actions that would reduce emissions of greenhouse gases were specified.

⁴ To salvage food from containers

⁵ The Green Party of Norway (MDG) has reduction of greenhouse gas emissions as one of the main agendas. The state budget proposed by this party has the most ambitious and positive effect on reductions of greenhouse gas emissions (Bjørnæs, 2016).

2. *Committed*

Participants of this category perform well regard to at least three out of the five indicators mentioned in category 1. In addition, people in this category perform additional actions requiring more effort and time. These actions include dumpster diving, composting personal food waste, repairing clothes, restricting consumption, participating in community supported agriculture amongst others.

3. *Very committed*

Participants of this category perform well in regard to at least four out of five main indicators, they perform additional actions like participants in category 2, and in addition they express to be actively influencing others (in reduction of carbon footprint) in their personal network, through their job or by being active in an environmental organization or political party with climate change in focus.

There are many weaknesses and limitations related to this scale. First of all, the actions are self-reported and my assumptions of their effect will likely differ from the real reduction. The participants might wish to present themselves in a better light, and therefore overestimate how much they **actually do**. I just have to assume that they are being honest. The participants might not be able to remember all the actions that they do. However, I assume that the most radical actions performed, specifically for the environment, is something they do remember. Another limitation, as already touched upon, is the subjective nature of the responses. Many of the habits stated are not directly quantifiable. For two people saying they have “low food waste”, the actual amount of food waste might differ. They might have different reference points and views on exactly how much “low food waste” is. Things like food waste can also be very hard to estimate.

4.6 Ethics

The interview guide was sent to and approved by Norwegian Center for Research Data (NSD). A declaration of informed consent was signed by all participants in advance of the interviews.

All safety procedures required by NSD were followed through. In addition, during social research methods class, we were taught that research should be beneficial both for the researcher and the participants. I was not sure how I could make this happen, but tried to give each participant a saying at the end of their interview. I would ask if they have some questions or something they would like to add.

5. Analysis

In this chapter I present the findings and trends of the data collected from the nineteen interviews. The analysis is divided into three parts and follows the structure of the research questions. In the first part values, norms and climate friendly behaviour will be discussed. In the second part the inferred and stated barriers of climate friendly behaviour will be discussed. In the last part I will look at the positive effects that social norms might have on the participants climate friendly behaviour.

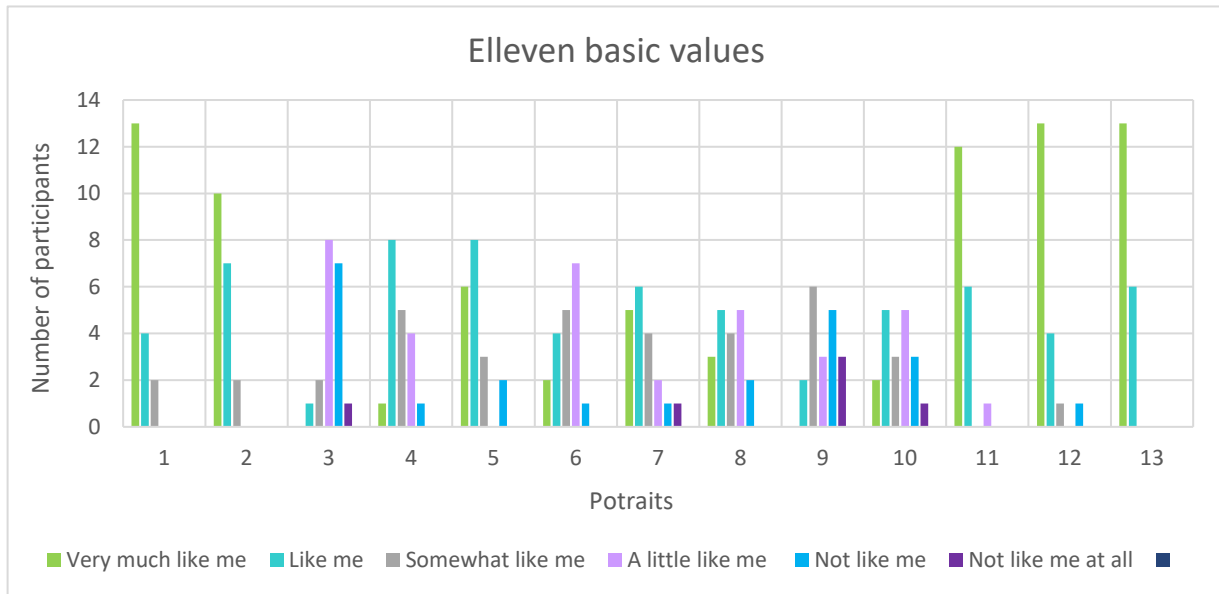
5.1 Are personally held values and norms important for personal engagement in behaviour that reduces greenhouse gas emissions?

To answer this question, the adjusted portraits from Schwartz' framework were used. Participants responses are presented in Figure 5.1. The horizontal axis shows the number of the portrait, while the vertical axis shows the number of participants that chose the different alternatives. The alternatives were: "very much like me", "like me", "somewhat like me", "a little like me", "not like me", "not like me at all" and "don't know". The figure does not show any columns for "don't know" because that alternative was not picked at all by the participants.

The figure shows that a high percentage of the participants feel similar to portraits 1, 2, 11, 12 and 13, meanwhile the other portraits have a bigger spread of responses. So, portraits representing power, achievement, self-direction, hedonism, stimulation, conformity, tradition and security have much bigger range of answers than portraits representing benevolence, universalism and environmental values. Most participants identify themselves with the latter values to a high degree ("very much like me" or "like me"). Another thing to notice is that the values with most disagreement are power and tradition. In other words, most of the participants have high values within the self-transcendence orientation and more variation within the other orientations.

All of the participants showed an awareness of environmental issues, including climate change, and all agreed that it is caused by human activity. It was more about future generations, those who's livelihoods are directly threatened by the weather patterns observed today, those who will become climate refugees and for the environment and animals. Of all the participants only one lacked the feeling of responsibility. The extent of responsibility differed however. Some focused a lot on the individual's responsibility, while some thought that a lot of the action should first and foremost be performed by the government. All participants showed concern,

but most were not concerned over the effects that climate change might have on themselves, for personal wellbeing or of their close ones.



PORTRAIT NUMBER	VALUES	PORTRAITS
1	Environmental	He/she strongly believes that people should care for nature. It is important for him/her to ensure sustainability for future generations.
2	Benevolence	It's very important to him/her to help the people around him. He/she wants to care for other people.
3	Power	It is important to him/her to be rich. He/she wants to have a lot of money and expensive things.
4	Achievement	It's important to him/her to be successful. He/she wants people to admire what he/she does.
5	Self-direction	Thinking up new ideas and being creative is important to him/her. He/she likes to do things in his/her own original way.
6	Hedonism	Having a good time is important to him. He/she likes to "spoil" him-/herself.
7	Stimulation	He/she is always looking for adventures and like to take chances. It is important to him/her to have an exciting life.
8	Conformity	It is important to him/her always to behave properly. He/she wants to avoid doing anything people would say is wrong.
9	Tradition	Religious belief is important to him/her. He/she tries to follow the traditions of his/her religion or family.
10	Security	It is important to him/her to live in secure surroundings. He/she avoids anything that might endanger his/her safety.
11	Environmental	He/she strongly believes that people should respect the planet. People should live in harmony with other species.
12	Universalism	He/she thinks it is important that every person in the world should be treated equally. He/she believes everyone should have equal opportunities in life.
13	Environmental	It is important to him/her to prevent pollution. He/she really thinks people should protect natural resources.

Figure 5.1: Adjusted version of Schwartz' Portrait Values Questionnaire

The high values within the self-transcendence and the awareness of the problem did not translate into equal amount of engagement in behaviour to reduce personal carbon footprint. Some participants were very engaged, spent a lot of time to alter their own habits and to influence others, while some only performed the convenient actions.

This is seen in Figures 5.2 – 5.4. The basis for the structure of figures is the three different classifications of their behaviour. The horizontal axis shows the number of each participant while the vertical axis shows to what degree the participants recognize themselves in the portraits. The value 3 on the scale indicates the alternative “very much like me”, 2 indicates “like me”, 1 indicates “somewhat like me”, 0 indicates “a little like me”, -1 indicates “not like me” and -2 indicates “not like me at all”. It was done like this to make it easier to see which values the participants strongly agreed and disagreed with. Without implying correlation, these figures show whether any pattern can be recognized and if there is any difference between the classifications. Of course, no significant difference can be stated without statistical analysis and with such low number of participants.

First, I wanted to see if the personally held values would be reflected in the behaviour of the participants. The most striking pattern is that it seems like participants of classification II and III identify more with benevolence, universalism and environmental values than those of classification I. It also seems that regarding the self-transcendence values, participants of classification II and III lean most towards the biospheric values. In classification I, altruism and universalism are valued most of the self-transcendence values.

Furthermore, I want to highlight some deviations from the main pattern. Participant 1, 2 and to some degree 4 express high values within the self-transcendence and biospheric orientations (Figure 5.2), but were at the same time placed in classification “aware but pretty passive” in the environmental behaviour scale. This means that these values are not being expressed through behaviour. One explanation for that might be the fairly weak norms towards behaviour regarding reduction of carbon footprint. No-one from classification “aware, but pretty passive” expressed willingness to change their behaviour in order to lower carbon foot print except participant 1. The barriers creating this value-behaviour gap will be explored in the next section.

I also want to point out participant 9. He expresses low self-transcendence or biospheric values compared to the other of classification III, however he does have very strong norms regarding

behaviour that reduces carbon footprint. When asked about the 5 different actions from ACT, he showed great knowledge of how to change his habits to reduce greenhouse gas emissions.

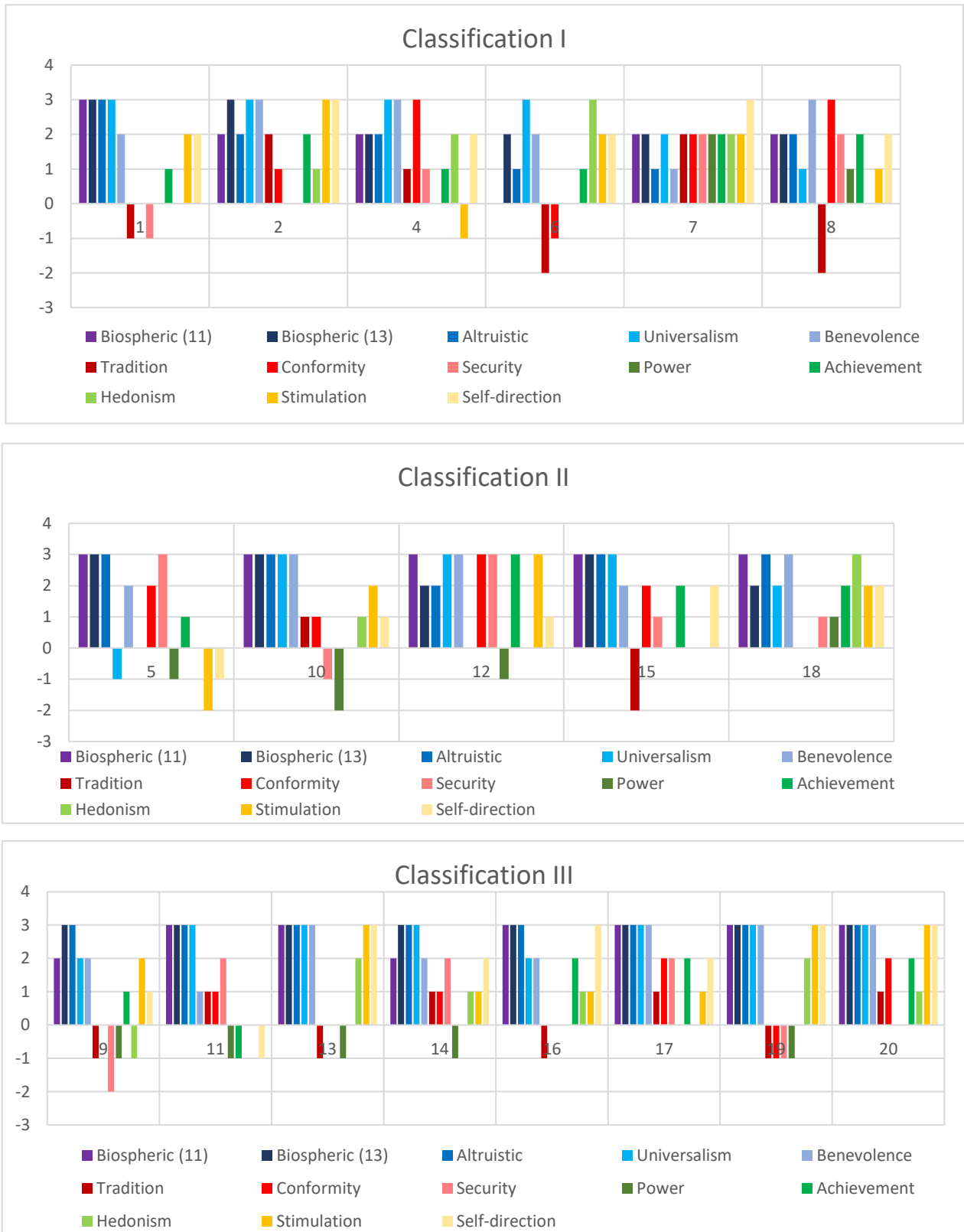


Figure 5.2-5.4: Responses to adjusted PCQ divided into classification I (5.2), II (5.3) and III (5.4).

Participant 6 was the only one from the whole sample who lacked the feeling of responsibility. Even so, his lifestyle does not seem to have a larger carbon footprint than the others from classification I. He is one of the participants who has made the least amount of air flights, he does not own a car and uses public transport. However, it seemed that these actions were not motivated by a desire to cut carbon emissions, but by health issues and economic situation. This seems to be the case for most carbon footprint reducing behaviour of this group. Those who don't have a car, have chosen this because it is more expensive and because it is more convenient to walk or use public transport. When asked about food waste and saving energy, the economic gain seemed to be the most important factor.

All of the participants from classification "committed" and "very committed" expressed norms that support pro-environmental action. When asked about whether she feels responsibility to act to prevent further climate change, participant 19 says that she does not understand how people can exempt responsibility. The most radical claim made was the intention of giving up having children or maximum having one in order to limit the ecological footprint including emissions of greenhouse gases.

Another thing to notice, is that it seems like the values of self-transcendence are clashing with those of stimulation. Many of the participants acknowledging the issues of climate change and their personal responsibility to act also desire to see the world, learn from other cultures and experience nature in other parts of the world. For several of the participants, this desire validates air flights.

5.2 What are the barriers for behaviour that reduces greenhouse gas emissions

From the last section, it is apparent that the participants perform a wide range of actions that reduce emissions of greenhouse gases, some more than others. Some actions are easier to perform, some demand more engagement. The participants also have different barriers for the different actions. In this section I want to explore these barriers focusing mostly on the five actions from ACT.

5.2.1 Practical barriers

This barrier was in most cases mentioned regarding commuting and air flights, in addition, but to a less degree regarding energy used at home and meat consumption. Participants 4 and 8 have workplace/university situated far away (more than 30 km) and there is no convenient way

to get there by public transport. It would take much more of their day if they were to commute, creating a big practical barrier. All the other participants did not have this barrier as they live close to the study or workplace or to public transport that takes them all the way to their destination.

When it comes to flying, most of the participant of classification II and III said they wish to cut down on air flights, but sometimes, when they chose to fly, it is because using alternatives is too expensive, takes too much time or is too inconvenient (too many changes of transport on the way). One participant chooses to fly because she does not trust the Norwegian railway operator in that the trains will come on time.

Another barrier mentioned by a few participants was poor insulation of their home. They wanted to do something about it, but some of them could not afford to fix this, and some were renting their apartment, so there was no incentive to invest money or the owner did not want to. In addition, some of those who rented did not live alone, and even though they wanted to turn the temperature down, their room-mates objected.

Some barriers were also mentioned for meat consumption. When eating out in Norway, the vegetarian options are often very few. One participant also mentioned that meat keeps her full longer, which is important to her since she has a labour-intensive job.

5.2.2 Personal barriers

Of all behaviours mentioned during the interviews, giving up flying and eating meat were hardest to change. Eleven of the participants said they want to cut down and three of them have completely stopped flying. One reason for this was the wish to visit close friends and family living abroad. Several of them were very passionate about visiting other countries with different cultures. One participant did yearly trips to southern Europe for health purposes.

The second most difficult habit to change was meat consumption. Most barriers here belong, however, to the “social barriers” section. However, *taste* was one personal barrier mentioned by two of the participants. One of them did not limit himself at all because he likes the taste so much. The other could not give up sea food. This is something that is not possible to substitute with anything else to her.

5.2.3 Social barriers

Most of the social barriers regarded meat consumption and flying. For many – especially in the older generations – meat is an important part of their food culture and completely giving up meat seems radical. Being radical was a term many used about themselves compared to their friends and family. It created conflict and one of the participants even avoided having dinner with one of her relatives because of this conflict. But many of them do eat meat at social events. They don't want to stick out and be different, perceived as being difficult or rude.

It seemed that the norms towards flying were stronger than for meat consumption. Several cases were mentioned where parents of the participants wanted them to join for vacation, but they didn't join in. One reason for this might be the recent focus of the adverse effects of flying in media.

5.3 How do social norms promote engagement in behaviour that reduces greenhouse gas emissions?

In a previous section I discussed how friends and family act as barriers towards actions that reduce carbon footprint. Next, I am interested in discovering how the social norms of those surrounding the participants affect them.

Only one of the interviewees in category I indicated any norms for environmentally friendly behaviour from friends/family. Most participants of the two other categories had either family or close friends who supported their climate friendly behaviour. This is not to say that absence of support from others causes the participants of classification I to do less. There are in fact participants in classification II and III who have experienced a lot of resistance from either friends or family. It seems as if the most engaged participants chose their friends based on their biospheric values.

The sources of support for climate friendly behaviour identified were first and foremost family. Some had learned from home the importance of limiting food waste and consumption in general, not as a measure for climate positive change, but as a norm inherited from times when people lived more scarcely. Others had family members who themselves were conscious of environmental issues and had change their behaviour. The second biggest source of motivation was friends. Some had become more conscious of their actions because of their friends and vice versa. The university was also mentioned by several as a source of support and engagement. Through their studies they had learned more about climate change and acquired

likeminded friends who are more engaged than the participants' friends from before they started studying. One last source mentioned was media. Some participants are reminded of the importance to act whenever they see "bad news".

Most participants agreed that having someone around them that supports their actions is of great help, and if those around them engage more in climate friendly behaviour this serves as inspiration. This was especially mentioned in regard to meat consumption. They appreciated having friends that they can prepare vegetarian meals with.

6. Discussion

Through the first research question I wanted to explore whether personally held values and norms are important for personal engagement in behaviour that reduces greenhouse gas emissions. This was done with the aid of adjusted value portraits of Schwartz and the environmental engagement scale that I created based on the participants of this study. The main pattern revealed was that participants of classification I exhibit weaker universalism, benevolence, biospheric and altruistic values than participants from classification II and III. The difference between classification II and III is not as prominent. This aligns with findings from other studies. A positive correlation between self-transcendence and attitudes or purchase intent towards organic food was found by Dreezens and his team (2005 a, b), Vermeir and Verbeke (2006) and Hoogland and his team (2007).

Of the five actions used from ACT, reducing food waste seemed to be the easiest for the participants to follow through. This is not a surprise as it requires little change of behavior compared to the other actions, and it is also a good way of saving money. The second easiest behavior to perform for my participants was commuting by other means than car. Several of them mentioned this as a health benefit. Most of them either walk, bike or go by public transport to their workplace or university. The barrier is low for commuting for the majority of the participants. Even though two participants mentioned that they want to continue like that when they finish studying, get a job and move to a place potentially further away, this might not be the case for all of them. Starting in a job will give them the funds to have a car, and if they eventually get kids, they might be more tempted to get a car in order to get quicker around. Regarding electricity saving behavior the most prominent barrier seemed to be practical and personal preference. Some of the participants lived in poorly insulated homes and were unable to do something about it either because it is too expensive or because they rent the place and are not in a position to make such a decision.

Cutting down meat seemed to be one of the hardest habits to change. Although most participants agreed that this is an important step in order to cut down carbon footprint, and that it has a large impact, it was also easily affected by others. When eating out with other meat eaters many would not feel comfortable standing out, or would not make a hassle out of it, and would just go for the same as the others. Personal preference was also an important factor for several participants.

Lastly, comes the behavior in regard to air flights. The biggest barriers here were personal and social. A few of the participants had family abroad and close friends abroad. Traveling by train

was for most participants regarded as a being to cumbersome, expensive and takes to much time.

When comparing the values of participants of classification II and III, as already mentioned, there is not a noticeable difference. It did not seem like there was any difference of barriers.

It is hard to tell how the participants of this study do compared to the average Norwegian without calculating the carbon footprint of all their actions. This is not feasible nor the intent with the data collected here. In this study I was only able to see how participants do relative to each other. I suspect that my sample performs better than the average. Most of them go by public transport, most of them have decreased their intake of meat and trips with airplane and more people mentioned that they vote for MDG at the municipal elections of 2019 (compared to the 15 % that voted in total in Norway (Spets 2019)). The low carbon foot print was in many cases also due restrictions of personal economy.

7. Conclusion and further suggestions

In this paper I intended to enhance our understanding of what may explain climate relevant behaviours among young people. My sample of Norwegians living in Akershus and Oslo seemed to be conscious of their actions and how they collectively affect global warming. Most of them felt responsible to act and most of them had changed their behaviours with the intent to lower their carbon footprint. However, there will always be something one could do better in terms of their footprint, and there isn't really a standard for how one should behave, so there will always be some gap, and always something one can improve.

The amount of behaviours changed by the participants of my study varied. Some had taken small actions with low effect on climate footprint like recycling and reducing amount of meat eaten, while some were vegans, did dumpster diving and were very active in MDG. The participants who were in classification II and III seemed to have higher values belonging to the benevolence orientation. They also had more people around them who also engage in environmentally friendly behaviour. Also, most participants revealed that having friends or family who support or do environmentally friendly actions motivates and inspires them as well. However, social norms seemed also to be one of the biggest barriers to this behaviour. Many participants were influenced by their friends and family to eat more meat and go on vacations by air flights.

Lastly, I have some recommendations for further investigation and suggestions for what I could have done differently. To make the environmental behaviour scale more accurate and reliable, it would be a good idea to use both qualitative and quantitative methods. Collect quantifiable data: ask them to fill in information on carbon foot print in a web page.

For a better understanding of the internal, or personal, barriers I would also recommend using Gifford's (2011) framework on psychological barriers that limit climate change mitigation.

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Appendix 1

Participant	Values	Actions	Scale
1	<p>Very much like me: Environmental values (1, 11, 13), universalism (12).</p> <p>Like me: Benevolence (2), self-direction (5) and stimulation (7).</p> <p>Not like me: Tradition (9) and security (10).</p>	<p>Feels like his food waste is pretty low. He is not afraid of cutting of mold and eating the good part of the product, he also ignores the expiration date and uses his senses to judge. Is not very picky with his food.</p> <p>Has reduced meat consumption compared to what he used to eat.</p> <p>Does not have a car. Uses bike or walk.</p> <p>Does not express desire to reduce air flights.</p> <p>Likes to keep it cool at home, does not spend a lot of power to heat his apartment.</p> <p>Brings a backpack to the store.</p>	1
2	<p>Very much like me: Benevolence (2), self-direction (5), stimulation (7), universalism (12) and environmental values (13).</p> <p>Like me: Environmental values (1, 11), achievement (4) and tradition (9)</p> <p>Does not disagree on any</p>	<p>Has always been careful with food waste.</p> <p>Buys meat on sale (is about to expire).</p> <p>Sold his car. Walks to work.</p> <p>Travel by air because it is quicker and cheaper and because some of the places there is no other way to get to.</p> <p>Tries to buy materials from producers (for his job).</p>	1
3	Missing	<p>Does not buy meat herself, but eats it because her partner likes it, and because it is a “hassle” to not eat meat in social setting. She eats sea food because she likes the taste and nothing can substitute it. She also thinks it is ok to eat meat when it is locally produced.</p> <p>She does fly, mostly when it is out of her control, for instance when her parents invited her and bought her tickets to France, but she has become more conscious and flies less than she used to. She also flies if other options are too inconvenient.</p>	2

		Poor insulation of their house, and does not want to renovate because they rent the place.	
4	<p>Very much like me: Benevolence (2), conformity (8) and universalism (12).</p> <p>Like me: Environmental values (1, 11, 13), self-direction (5) and hedonism (6).</p> <p>Not like me: Stimulation (7).</p>	<p>Not always that good at eating leftovers.</p> <p>Forgets sometimes what she has in her fridge and buys the same. Says that she could be better at putting food that is about to expire in the freezer.</p> <p>Does not eat pork. Does eat beef, fish and chicken, but not as much as she used to.</p> <p>She uses her car to travel to work and study place weekly.</p> <p>Does go on at least one vacation to Spain per year.</p> <p>Does want to insulate her home, and is saving up. Tries to turn of the lights. Uses both electricity and firewood to heat her home.</p>	1
5	<p>Very much like me: Environmental values (1, 11, 13) and security (10)</p> <p>Like me: Benevolence (2) and conformity (8).</p> <p>Not like me: Power (3), self-direction (5) and universalism (12).</p> <p>Not like me at all: Stimulation (7).</p> <p>Self-transcendence and conservation are most important</p> <p>Openness to change and self-enhancement are least important</p> <p>Weirdly enough different values within universalism are ticked of as important and unimportant</p>	<p>Has good habits to limit food waste.</p> <p>She is vegan.</p> <p>Does not have a car.</p> <p>Travels by air to Germany, but otherwise tries to reduce air flights. Never been on vacation with her family where they had to go by airplane.</p> <p>Lives in a small apartment that does not require extra heating in winter (apart from central heating). Has saving showerhead.</p> <p>Reduces consumption (compared to what she would have used if there was no climate issues).</p> <p>Votes for party that is climate positive.</p>	3
6	<p>Very much like me: Hedonism (6) and universalism (12)</p>	<p>Feels like he has low food waste.</p> <p>Eats meat.</p>	1

	<p>Like me: Benevolence (2), self-direction (5), stimulation (7) and environmental values (13).</p> <p>Not like me: conformity (8).</p> <p>Not like me at all: Tradition (9).</p>	<p>Does not have a car and travels only by public transport.</p> <p>Travels less than once every second year.</p> <p>Recycles.</p>	
7	<p>Very much like me: Self-direction (5).</p> <p>Like me: Power (3), achievement (4), hedonism (6), stimulation (7), conformity (8), tradition (9), security (10) and universalism (12) and environmental values (11, 13).</p> <p>Did not disagree with any of the values</p> <p>This is a weird one</p>	<p>Does not think he throws that much away, only when it expires.</p> <p>Eats meat.</p> <p>Does not own a car, travels mostly by public transport.</p> <p>Travels 2-3 times a year to visit family in England and Greece, and friends in USA.</p> <p>Has a very energy efficient apartment with good insulation and is centrally heated.</p> <p>Recycles.</p>	1
8	<p>Very much like me: Benevolence (2) and conformity (8).</p> <p>Like me: Environmental values (1, 11, 13), achievement (4), self-direction (5), security (10).</p> <p>Not like me at all: Traditions (9).</p> <p>Weird one</p>	<p>Feels like he has low food waste, but does throw away leftovers.</p> <p>Has reduced meat consumption compared to what he thinks other family members consume.</p> <p>Commutes every day by his car.</p> <p>Goes on vacation by flight once every second or third year.</p> <p>Tries to reduce energy use.</p> <p>Recycles both at home and workplace. Tries to reduce exhaust from his car.</p>	1
9	<p>Very much like me: Environmental values (1, 13).</p> <p>Like me: Benevolence (2), stimulation (7), environmental values</p>	<p>Almost no food waste and dumpster dives most of his food.</p> <p>Vegan, unless the meat is dumpster dived.</p>	3

	<p>(11) and universalism (12).</p> <p>Not like me: Power (3), hedonism (6), and tradition (9) are not important.</p> <p>Not like me at all: Security (10).</p> <p>This means that self-transcendence is most important but also openness to change.</p>	<p>He has a car but tries to use it as little as possible. Travels mostly by bike or public transport. He has a wagon on the bike to transport food.</p> <p>Used travel by air 2-3 times a year, but has limited it to less than that. Tries to no fly at all. Is willing to spend a lot of time to get somewhere by train (already doing it).</p> <p>Saving shower head. Turns of lights. Have asked to landlord to solar panels or heat pump, but he refused to.</p> <p>He is politically active in the municipality (in MDG, a party with climate change as one of the main agendas), and tries to bring changes to the university.</p>	
10	<p>Very much like me: Universalism (1), benevolence (2), and environmental values (11, 12, 13)</p> <p>Like me: Stimulation (7).</p> <p>Not like me: Security (10).</p> <p>Not like me at all: Power (3).</p> <p>This means that self-transcendence is most important, but also openness to change</p>	<p>Has low food waste.</p> <p>Eats only meat of wild animals, or in social situations where she does not dare to say no.</p> <p>Does not have a car. Uses train or bus when visiting family in Kristiansand.</p> <p>She has stopped flying for now and feels like she has used up her quota to fly for the next 10 next years. Flies frequently earlier.</p> <p>Takes short showers, turns water of when putting shampoo on. Turns of the heat in her own room when going away for the weekend.</p> <p>Tries to buy eco-friendly/organic products.</p>	2
11	<p>Very much like me: Universalism (12) and environmental values (1, 11, 13).</p> <p>Like me: Security (10).</p> <p>Not like me: Power (3), achievement (4) and self-direction (5).</p> <p>This means that she values self-transcendence the most and does not value self-</p>	<p>Has been very concerned with food waste the last 10 years. Composts in her bokashi, so whatever she doesn't eat is made into compost.</p> <p>Eats meat only when someone else serves it.</p> <p>Commutes mostly by public transport. Might use the car once a month to get to her study place.</p> <p>Used to travel 2-3 times a year the last 10-15 years, but she has started limiting herself to one trip every second year. Tries to travel by train when she can.</p> <p>Her apartment is well insulated and centrally heated, so she rarely has to heat it extra. She turns the lights of.</p>	3

	enhancement and openness to change	Tries to choose the most climate friendly and local products when she can. Most items she buys are second hand. Is member of an environmental organization.	
12	<p>Very much like me: Benevolence (2), achievement (4), stimulation (7), conformity (8), security (10) universalism (12) and environmental values (11).</p> <p>Like me: Environmental values (1, 13).</p> <p>Not like me: Power (3).</p>	<p>Throws almost no food away. If something is about to expire, she will freeze it down.</p> <p>Vegetarian.</p> <p>Sold her car and travels only by walking, bike or train.</p> <p>Travels by air more than she feels that she should.</p> <p>Bad ventilation in her room. It gets hard to do homework and sleep, so she needs to keep window open and heating at the same time. Always turns the lights of.</p> <p>Only buys a few new clothing items every year. Wears them until they get worn out, repairs old clothes.</p> <p>Often it is food that has more impact on the environment is much cheaper, but she still tries to buy local organic foods.</p>	2
13	<p>Very much like me: Values environmental values (1, 11, 13), universalism (12) benevolence (2), self-direction (5), stimulation (7). This means she leans towards self-transcendence and openness to change</p> <p>Like me: Hedonism (6).</p> <p>This means she leans towards self-transcendence and openness to change</p> <p>Not like me: Power (3) and tradition (9).</p>	<p>Has low food waste.</p> <p>Vegetarian.</p> <p>Does not have a car. Uses her bike, buss or goes by train.</p> <p>Has been traveling a lot the last years because of studies and work different places in Europe. Has been on 4 trips this year, but has been inspired by a friend to stop flying for a while. Wants to travel to more local destinations instead.</p> <p>Short showers, doesn't leave the windows open when heating is on, fills the dishwasher and washing machine full. Doesn't watch TV.</p> <p>Buys a lot second hand, repairs things herself, eats local food, is a member of Dysterjordet andelslandbruk (Community supported agriculture), recycles, tries to travel shorter and less, hitchhikes, works at farms during her vacation. Spends money on experience rather than things.</p>	3

14	<p>Very much like me: Environmental values (1, 11, 13) and universalism (12).</p> <p>Like me: Benevolence (2), self-direction (5) and security (10).</p> <p>This means that self-transcendence is most important, but openness to change and conservation is also important</p> <p>Not like me: Power (3).</p>	<p>Does barely throw any food away.</p> <p>Eats meat as normal when she is with friends.</p> <p>Does not own a car anymore. Bikes and walk whenever she can, and when going on trips she takes responsibility to plan, so that all cars are being used efficiently. Travels by train.</p> <p>Does not heat her apartment unless she really has to. Turns of lights when she is not in the room.</p> <p>Has flied 7 times this year.</p> <p>Tries to influence her friends and family to behave more climate friendly.</p>	2,5
15	<p>Very much like me: Universalism (12) and environmental values (1, 11, 13).</p> <p>Like me: Benevolence (2), achievement (4), self-direction (5) and conformity (8).</p> <p>This means that self-transcendence is most important, but the other higher-order values are also important.</p> <p>Not like me at all: Tradition (9).</p>	<p>Says that he throws away more food than he should, but less than the average. Reason is that he forgets to check expiration dates and doesn't plan the meals properly.</p> <p>Has cut down on animal products, especially dairy, beef and other products from cows.</p> <p>Use the car 2-3 times a week to go to the store, and to get away from the city to walk their dog. Rents an apartment close to public transport om purpose.</p> <p>Has travelled by airplane 3 times his whole life. Has travelled within Norway instead of flying somewhere.</p> <p>His home is insulated well, so they don't need to spend a lot of energy to heat up, and they try to keep it cool.</p>	2
16	<p>Very much like me: Self-direction (5) and environmental values (1, 11, 13).</p> <p>Like me: Benevolence (2), achievement (4) and universalism (12).</p> <p>This means that self-transcendence and</p>	<p>Has low food waste. Composts food-waste and uses it in her garden.</p> <p>Does not eat meat. Meat is not allowed in her home.</p> <p>She does not have the driving certificate, and uses public transport or catches a ride with her husband who has an electric car. Tries to optimise her flights, but will not cut it completely as she has friends different places in Europe and family in Siberia that she wants to visit. Maximum of 5 times per year.</p>	3

	<p>self-direction is the most important</p> <p>Not like me: Tradition (9).</p>	<p>They have a poorly insulated house, but want to insulate it soon, when they have saved up. Have installed a heat pump that is energy effective. Keep the temperature below 22 degrees. Often put on clothes to keep warm instead of heating.</p> <p>Uses her cell phone for as long as she can before she gets a new one. Tries to create as little trash as possible.</p> <p>Shops second hand.</p> <p>Works with sustainability certification of building materials and tries to influence her co-workers and friends to think more sustainably.</p> <p>Says that she will maximum have 1 child.</p>	
17	<p>Very much like me: Benevolence (2), hedonism (6) and environmental values (1, 11).</p> <p>Like me: Achievement (4), self-direction (5), stimulation (7) universalism (12) and environmental values (13).</p> <p>This means that self-transcendence and openness to change are important to her</p> <p>No values are “not like me” or “not like me at all”</p>	<p>Tries to throw as little food away as possible and has good mechanisms to prevent food waste.</p> <p>Almost vegetarian (eats fish).</p> <p>Not very good at saving energy. Take long showers.</p> <p>Has been on 1 trip by air this year and wants to keep it to maximum 2, but says that she might have to limit it even more.</p> <p>Does not have a car. Travels mostly by public transport.</p> <p>Has reduces her consumption in general.</p> <p>Has influenced her parents to eat less meat.</p>	2,5
18	<p>Very much like me: Benevolence (2), hedonism (6) and environmental values (1, 11).</p> <p>Like me: Achievement (4), self-direction (5), stimulation (7), universalism (12) and</p>	<p>Tries to throw as little food away as possible and has good mechanisms to prevent food waste.</p> <p>Has reduced the amount of meat she eats.</p> <p>Does not have a car, travels mostly by public transport.</p> <p>Lives in a big apartment, so needs to heat a lot to keep it from freezing.</p> <p>Has been on 3 trips by air this year and does not feel bad about it. She wants to continue like that.</p>	2

	<p>environmental values (13).</p> <p>This means that self-transcendence and openness to change are important to her</p> <p>No values are “not like me” or “not like me at all”</p>	<p>Tries to influence the girls that she lives with to recycle and give the clothes that they don’t need to second hand stores instead of throwing away.</p> <p>Is very meticulous about recycling.</p> <p>Uses plant based milk from oats made in Europe, not soy from Brazil.</p>	
19	<p>Very much like me: Environmental values (1, 11, 13), benevolence (2), self-direction (5), stimulation (7), and universalism (12). All of these she thinks are very much like her. This means she leans towards self-transcendence and openness to change</p> <p>Like me: Hedonism (9).</p> <p>Not like me: Power (3), conformity (8), tradition (9) and security (10).</p>	<p>Has low food waste and is very conscious about it.</p> <p>Is vegetarian</p> <p>Commutes by public transport.</p> <p>She loves to travel and would prefer going by train. The biggest barrier here is money. She would be willing to spend more time on train, but the limiting factor would likely be the cost.</p> <p>Has done a lot of changes to her habits in order to reduce her carbon footprint. Including repairing her own clothes, short showers, buying most things second hand, spends time to inform others, including family and friends and other things that is good for the environment in general like picking up others trash, donating money to env. organizations. As a child, she called the mayor several times to talk to them about local environmental issues.</p>	3
20	<p>Very much like me: Environmental values (1, 11, 13), benevolence (2), self-direction (5), stimulation(7), and universalism (12). All of these she thinks are very much like her. This means she leans towards self-transcendence and openness to change</p> <p>Like me: Achievement (4) and conformity (8) meaning that conservation and self-</p>	<p>Almost all food she eats is dumpster dived, so she has minimal food waste. Does eat dumpster dived meat. Does not have drivers licence, but is getting one to primarily use for going on camping trips, not commuting.</p> <p>Tries to keep air flights to a minimum because of climate change. She wants to follow the suggestions of max 3 flights per year as suggested by MDG.</p> <p>Hasn’t been giving a thought to how much electricity she spends because her apartment is well insulated, and she doesn’t need to turn the heat up that often.</p> <p>Active in MDG and environmental organization.</p>	3

	<p>enhancement is also important to her</p> <p>Does not disagree with any of these values.</p>		
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Appendix 2

Participant	Norms
1	<p>He does feel responsibility. This is the reasons he has cut down on meat consumption. Feels like human population is too big to be sustainable. Feels responsibility for the animals, planet and climate, not other humans.</p> <p>Says that all humans are responsible. The large food waste is a shame. People have too low barrier to throw away foods and don't use their senses.</p> <p>Supports the youth that skips school to strike for climate. Supports dumpster diving. Does not feel bad about going on vacation every now and then. Supports those who "go all in" like vegans, but does not want to do it himself.</p>
2	<p>Says it is unfair that people living today make it harder for next generations. Thinks that all people are responsible, including himself. He has the power to vote both on political parties and on firms with his money. Has learned to take care of his belonging and nature around him. Many of the things he hears people talk about as actions to reduce carbon footprint he says are natural for him to do.</p>
3	Missing
4	<p>Does feel responsibility, because she can influence the market, to a certain degree. There are some things that can be done on personal level, but a lot is up to politicians and the economy. Thinks that people who have the knowledge of the issues should take responsibility and teach others. States that for such a small nation we have very large emissions. Therefore it is important to vote for the right parties and consider what we do on a day-to-day basis.</p> <p>She strongly believes that one should do better choices on household level.</p>
5	<p>Does absolutely feel responsibility. And says that everyone is responsible, but the biggest responsibility is on the government. She would live differently if there were no environmental issues. Says that her own ecological footprint is too large in regard to the size of human population. She knows it is bad to fly, and she tries to limit herself. The climate positive actions she does might help if they influence those around her.</p> <p>She would not have a problem with not flying if it was forbidden. It is the ability of being able to do so to get places that makes it hard.</p> <p>If she decides to travel by air somewhere, it must be worth it. It must be important, like meeting close friends, not just because she wants to travel.</p>

6	Does not feel responsibility since he don't know what he personally can do to help.
7	Does feel responsibility to a certain degree, but things that the biggest responsibility lays on the politicians. They should use taxes and subsidies. Supports development of technology and policies related to electric cars. Believes that he has a pretty sustainable lifestyle.
8	Does feel responsibility. Feels responsible for local environment, for people around him and animals. Says that everyone is responsible for everyone else. One person is not enough to make a change. Everyone should go together about it. He does not feel power to change much as an individual. He tries to influence the firm his working for to do some environmentally friendly changes.
9	Is emotionally affected by climate change. It affects how he thinks and acts. He feels very responsible, both in regard to personal habits and activism and advocacy. Pain is an important factor to him. He is afraid that many people and animals will be in pain because of climate change. He feels that change needs to start at political level. But individuals have power to vote for the right politicians.
10	Does feel responsible. Thinks that if one wants to be environmentally friendly one cannot do whatever he likes to. Everyone is responsible. Individuals can make a change. Environmental issues are created by humans and she says that she is one of them who can do something about it. Climate change made her search information on how to live more sustainably.
11	Does feel responsibility, but thinks it is wrong to focus too much at the individual. It is up to the political structures. Media is too focused on blaming the individuals. Does not feel there is much she can do as an individual. Tries to limit flying compared to what she used to do.
12	Does feel responsibility to a certain degree. One can do some things at household level, but the biggest responsibility is on politicians. She has always been interested in nature and to learn about the world. When she learned about climate changes it felt natural for her to start studying renewable energy. She feels responsible for the animals and those who cannot take care of themselves. She loves to travel and feels she has been traveling too much this year. She loves to travel and see the world and says that if she is going to be bad at climate friendly actions is it going to be this.
13	She does feel a responsibility and she does believe that individuals have power to make a change. So, everyone is responsible to act. Thinks that everyone is able to reduce their consumption. Got a lot of her environmental consciousness from her studies at NMBU.
14	She feels responsibility and says that everyone is responsible, no matter if they are rich or poor. From her years as a scout she learned to respect nature and the resources. Has a family tradition to go on vacation in south of Europe, and does not want to change this. Thinks it is good that grocery stores are getting more vegetarian options.

	<p>She does feel like she is traveling too much by air, and says she wants to reduce it, but does not want to do more local trips and will continue visiting their cabin somewhere south in Europe once a year. She also flies to visit friends and family.</p>
15	<p>He feels responsible in regard to living in a country that to a large degree contributes to global warming. He shows great concern and thinks that the only way to stop environmental degradation and climate change is to do radical change in human societies, especially our economy. Believes that everyone can do their part. Seems also pretty pessimistic about future.</p>
16	<p>Does feel responsible, especially for nature because it cannot speak for itself. Everyone should take action starting with themselves. Learned about climate change during studies and decided she wants her a job where she can influence emissions. Wants restrict herself to having maximum one child for the sake of climate change. Thinks that it should be more socially accepted to borrow things from each other like fancy clothing.</p> <p>Even though she is quite strict with other actions reducing carbon footprint, she does not mention any shame for flying. She has friends and family in Europe and Siberia and flies to meet them.</p>
17	<p>She does feel responsibility. Says she has the responsibility for the planet that she lives on. Feels that everyone can reduce personal emissions and one can influence others. Her friend flied to Bergen, which the participant didn't like, but didn't dare to say anything. Feels shame for consumption. Has flied two times this year, and does not want to fly more. Wants to keep it on that level, but thinks it might not be enough. Does not want to buy new things.</p>
18	<p>Does feel responsibility to do something. Thinks that individuals are essential in creating change, so even though her actions alone do not change a lot, together can do something.</p> <p>Feels bad for throwing away clothes. Shows great concern for future climate refugees and animals suffering from climate change. Has been engaged in environmental issues since middle school. Thinks that consumption should go down. Has been on 3 flights this year and thinks this is acceptable. Does not feel shame. Tips to warm countries gives her so much joy that she is not willing to completely stop flying.</p>
19	<p>Does absolutely feel responsible. If she doesn't do something, who will? Says that if everyone does a little, it will help against climate change.</p> <p>Feels shame for flying.</p> <p>Is interested in environmental issues and actively searches information to learn more about it. Expresses concern for people now and next generations, but also for the animals. Has been vegetarian since she was 11. Scold her parents for their high food waste.</p>
20	<p>She feels responsible and guilty for being born in a country where people have good lives and don't care much about climate change.</p>

Feels ashamed to fly. Does not understand how other people don't feel responsibility. Thinks it is the consumers who should take the responsibility, but to do that, politicians have to create better conditions to do right choices.

Thinks it is egotistical to be put humans first, compared to animals and nature.

Appendix 3

Interview guide

1. Sosio-økonomiske faktorer

- Kjønn
- Alder
- Bosituasjon
- Yrke/utdannelse

2. Miljøproblemer

- Hvilke miljøproblemer vet du om?
- Hvilke miljøproblemer er du mest bekymret for og hvorfor? (bekymrer det deg?)
- Føler du deg personlig påvirket av klimaendringer?
- Hva er dine kilder for kunnskap om klimaendringer?

3. Ansvar

- Føler du et personlig ansvar for å hjelpe å bekjempe klimaproblemer?
- Hvis ja, hvem er det ansvar ovenfor?
 - o Deg og dine nærmeste?
 - o Eller for mennesker du ikke kjenner fra andre steder på jorda / generasjonene som kommer etter oss?
- Hvem er kilde til klimagassutslipp?
 - o Staten, firmaer eller forbrukere?
 - o Norge, eller først og fremst andre land med mere økonomisk makt?
- Hvem har ansvar for å løse problemet?
 - o Staten, firmaer eller forbrukere?
 - o Norge, de landene som forurenses mest, de landene som blir mest påvirket av klimaendringer?
- Føler du som enkeltperson og forbruker at du har makt til å forandre på noe, eller må forandring starte i politikken og i firmaer?

4. Omgangskrets

- Hvordan er din omgangskrets? Hvem er de, hvor er de fra?
 - o Familie
 - o Venner
- Er klimaendringer et tema dere snakker om?
 - o Hva snakkes det om da?
- Varierer det mellom de ulike omgangskretsene?

5. Handlinger

- Gjør du noen spesifikke handlinger for å unngå klimagass utslipp?
- Hvilke handlinger er det?
- Hva motiverer deg til å utføre disse handlingene?

Handlinger fra ACT:

- Redusere matsvinn
- Spise mindre kjøtt
- Spare energi i husholdning
- Pendling til jobb/studier
- Flyreiser

Innen hver handling spør:

- Hva gjør du?
- Hva annet kunne du tenkt deg å gjøre?
- Barrierer/støtte
 - Praktiske
 - Personlige
 - Sosiale
 - Familie
 - Venner

6. Oppsummere om påvirkning

- Hvordan føler du at folk du omgås med daglig/ukentlig påvirker dine klima-vennlige handlinger?
 - Støtter de deg?
 - Holder de deg tilbake fra å gjøre mer?
 - Er det lettere å selv gjøre noe når du ser at de gjør noe for å minske utslipp?



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Noregs miljø- og biovitenskapelige universitet
Norwegian University of Life Sciences

Postboks 5003
NO-1432 Ås
Norway