



Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

**Faculty of Natural Resources and
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From being worried about the climate crisis, to reducing or quitting traveling by air

and what Tågsemester and Vi håller oss på jorden has meant for this
behavior change.

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ABSTRACT

In order to transition to a society that can exist safely within the planet's biophysical limits, we need act on all levels simultaneously. This thesis focuses on how citizens can act individually and collectively to change behavior and to create acceptance and support for politics and companies to make necessary changes.

Research has shown that air traveling has increased greatly in the last decades, even if a slight change can be seen in recent years. A majority of Swedes are now aware of climate change and positive to taking the train instead of flying. But there is a gap between people's attitudes and behavior when it comes to flying. The study is based on semi-structured interviews with Swedes who have bridged this gap of awareness and behavior to reduce or quit their private flying. It looks at how this behavior change has happened and what the initiatives Tågsemester and Vi håller oss på jorden has meant for this change. A theoretical framework of strategies to overcome psychological barriers to behavior change is used to clarify and better understand what the interviewees expressed.

The study suggests that when the understanding of the negative consequences of one's flying increases, a need to change behavior is felt and can lead to the decision to reduce or stop flying. It also shows that social support of close one's acting as role models is very helpful in this change process. They inspire and show that it is possible to change.

The study also suggests that the social networks Vi håller oss på jorden and Tågsemester is very appreciated in helping to form an intention or reinforce a decision to reduce or stop flying. They are a community of support, in this often controversial behavior change, showing that there are many who care and act for the climate. They show personal stories of inspiration and experiences, making the change appear attractive and easier. The promise to not fly for a year is also helping to make the decision to stop flying easier. The study shows that the engagement in changing air traveling behavior, tend to spill over to engagement in making other areas of one's life sustainable as well as to seeing one's behavior change as part of a larger political engagement.

POPULAR SCIENTIFIC SUMMARY

For society to become sustainable we have to act on all levels at the same time. This study focuses on what citizens can do as individuals and together to change behavior and to create acceptance and support for politics and companies to make the changes that has to be made.

Research shows that air traveling has increased greatly in the last decades, even if this has begun to change in recent years. A majority of Swedes are now aware of climate change and positive to taking the train instead of flying. But there is a gap between people's attitudes and behavior when it comes to flying. The study is based on interviews with Swedes who have bridged this gap of awareness and behavior to reduce or quit their private flying. It looks at how this behavior change has happened and what the initiatives Tågsemester and Vi håller oss på jorden has meant for this change. To better understand this issue the study also used research on how to overcome psychological barriers to behavior change.

The study shows that when people understand the environmentally negative consequences of one's flying, they tend to want to change behavior and that can then make them reduce or stop flying. It also shows that social support of close one's acting as role models, is very helpful in this change process because they inspire and show that it is possible to change.

The study also shows that the social networks Vi håller oss på jorden and Tågsemester is very appreciated in helping the interviewees to reduce or stop flying. They are a community of support, in this often controversial behavior change, showing that there are many who care and act for the climate. They show personal stories of inspiration and experiences, making the change appear positive and easier. The promise to not fly for a year, is also helping to make the decision to stop flying easier. The study shows that the engagement in changing air traveling behavior, tend to spill over to engagement in making other areas of one's life sustainable as well as to seeing one's behavior change as part of a larger political engagement.

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INTRODUCTION

The earth and humanity have left the Holocene, the period when the climate was relatively stable and our civilization developed. We now live in the Anthropocene, where human actions are the main driving force of global environmental change. In order to remain living on a relatively stable earth, we need to stay within the boundaries of the planet. If we exceed those boundaries, critical systems might change irreversibly and abruptly with unknown consequences (Johan Rockström, Will Steffen, Kevin Noone, et al., 2009).

The greenhouse gas emissions from Sweden are relatively low, if one sees it from a territorial perspective. But the emissions that our consumption and lifestyle cause abroad (like emissions from imported products and international transports), are not included. The volume of consumption has increased greatly in recent years, including air-travel. For example in the last 20 years the number of foreign air passengers have increased by over 150 per cent. Production of what we consume can be made more efficient and thus cause to less emissions, but that will not be enough (Naturvårdsverket, 2015). The amount of domestic passengers traveling by air has decreased slightly in the last five years. The amount of passengers flying to the rest of Europe has continued to increase, but slower than before. When it comes to destinations outside of Europe the amount of passengers has not decreased (Transportstyrelsen 2018).

We might have less than 12 years to make the most urgent changes in order to stay beneath 1,5 degrees Celsius, according to the IPCC (IPCC, 2018). In order to transition to a society that can exist safely within the planet's biophysical limits, we need act on all levels simultaneously. The political sphere needs to make structural changes to systems and companies need to find sustainable business models. Citizens need to act individually and collectively to change behavior and to create acceptance and support for politics and companies to make necessary changes. How people can act alone and together was the focus of this thesis.

According to Johan Rockström, referring to Simon Sinek, society and the market will change when 15-18 per cent of a population believes in a shared vision and change perspective, because then others will follow. There are about 12 per cent already who are adopting pro-environmental behavior. Another 6 per cent is needed and can be found among those who are worried about climate change, but not active themselves yet (Svergies Radio, 2015). It is hard to know exactly how large a minority has to be in order to cause major changes in society. Research have found that a tipping point for social change is when 25% of the population change behavior (Science, 8 June 2018). But for this study, what is interesting is that it appears to be a minority of the population that has to change perspective, share a vision and share new behaviors in order to cause larger changes in society.

In recent years in Sweden the debate on air traveling as contributing to greenhouse gas emissions has increased and is a sensitive issue. For example, the journalist Jens Liljestrand wrote about the paradox

of flying with his kids to see coral reefs, which he then discovered to a large extent have died, partly because of people flying there to see those reefs (Expressen, 2018). Many people are trying to act environmentally friendly at home, but then want to travel by air for a vacation. In Sweden a fifth of individuals account for more than half of the air travel and those belonging to homes of the socioeconomic groups of higher officials or entrepreneurs, accounted for twice as high air travel-based emissions, as individuals from working class homes (Naturvårdsverket, 2015). There are many views on the topic; some people think that one's choice of vacation is and should be a personal decision not to be made into something to be ashamed of, while others believe that air travel needs to be limited and should not be exempt from taxes that other means of transportation have. A small tax on flying was introduced in Sweden in April 1, 2018 (Transportstyrelsen, 2019), but even as a token amount, it has been criticized.

Most people in Sweden are aware of the climate crisis, for example 95 per cent of Swedes thinks that Sweden will be affected by climate change in the future. 78 per cent thinks that they can act personally to slow climate change down. 78 percent of the population are positive to taking the train instead of flying. 65 per cent can to some degree, see themselves choosing a vacation closer to home, rather than flying abroad (Naturvårdsverket, 2019). This does not mean that most people understand the full scope and the urgency of the problems or actually in real life take the train instead of flying. In research on pro-environmental change, it is often described that there exists a gap between attitudes and actual behavior, people understand that something needs to be done, but do not actually change behavior, or not as much as is needed. How to bridge this gap has been the focus of a vast amount of research. According to the research for this thesis, there are theories emphasizing different aspects of pro-environmental behavior change. Theories mentioned in this paper focus on aspects like individual, intentional, rational thinking, the role of social norms, group identity and social interaction and how they can be used to change behavior. The complexity of this field can explain why it has been so hard to create behavior change, despite decades of research. In that light Per Espen Stoknes thoughts on how to communicate behavior change successfully, provides a concrete array of possible opportunities, which gives hope for this crucial task of changing people's actions. He proposes ways to move beyond the most common psychological barriers to change.

This thesis focused on how initiatives can support this a behavior change to reduce or stop flying. This was studied in two Swedish initiatives: Tågsemester (Train Vacation) and Vi håller oss på jorden (We keep ourselves on the ground). Societal barriers to reduce or stop traveling by air or work-related travels, were not part of the study.

The two initiatives

Tågsemester and Vi håller oss på jorden are two initiatives started by citizens to encourage more sustainable traveling and less air traveling. The initiatives were chosen because they use both similar and different strategies or methods to encourage behavior change. They have both been visible in media on several occasions and have been part of the debate around flying, along side other initiatives such as Jag flyger inte - för klimatets skull (I don't fly - for the sake of the climate). This debate has

helped in changing the behavior of flying for individuals and businesses and build support for political policy. One example of this was that the paper Veckan Affärer (Weekly Business) ran a climate challenge where Swedish companies were encouraged to halve their air travel in 2019. The construction company NCC have decided on a new traveling policy, where thousands of employees will change their behavior (Veckans Affärer, 2019).

Tågsemester is an initiative for people who are interested in traveling sustainable by train. The Tågsemester group was started in 2014 by Susanna Elfors and has grown tremendously from around 3600 members in December 2017 to 94 933 members in June 2019 (Tågsemester, 2019). Inspiration, tips, sharing of knowledge around train travel, is what is shared in the group (Nyhetsmorgon, 8 January 2019). The group has been visible in TV, newspapers, magazines and radio in Sweden and abroad. The founders/administrators have debated over improved train connections in the European parliament. The focus here is not on reducing flying, but about increasing train travels. Susanna Elfors believes that people who wants to travel and do it sustainable, see traveling by train as a possibility (Nyhetsmorgon, 8 January 2019).

Vi håller oss på jorden is another initiative aiming to raise awareness of the impact of flying on the climate crisis, to encourage reduced air travel, as well as to motivate people to talk about the climate. The initiative was stated in 2018 by Maja Rosén. Vi håller oss på jorden runs the campaigns Flygfritt 2019 and Flygfritt 2020 (flight free) which encourages people to stop flying for one year; 2019 or 2020, but only as long as 100,000 Swedes pledges to do the same. The campaign can now also be found in France, the UK, Denmark and Belgium and is spreading to other countries. The initiative has been visible in TV, newspapers, magazines and radio in Sweden and abroad on BBC for example (Vi håller oss på jorden, 2019). In June 2019 around 14 881 people had promised not to fly that year (Flygfritt 2019, 2019). In the same month there were 4 169 people who through Flygfritt 2020 promised not to fly that year (Flygfritt 2020, 2019).

Aim

The reason for doing this thesis, was to try to contribute to improved communication and intervention strategies encouraging people to change to sustainable behaviors and lifestyles. It did so by gaining insights into the thoughts and feelings of people who have done such a transition. The aim of the thesis was to investigate how people change behavior from being aware of and worried about the climate crisis, to consider reducing or quitting traveling by air and what the initiatives Tågsemester and Vi håller oss på jorden have meant for this transition. The research questions to help this investigation were:

- *How do people experience the process of change, from being aware of and worried about the climate crisis, to reduce or quit their air traveling?*
- *What have Tågsemester and Vi håller oss på jorden meant for this transition?*

RESEARCH OVERVIEW

Pro-environmental behavior is a social challenge, according to most research on the topic. Attitudes and behaviors of individuals need to change, and so does social contexts, practices and norms (Hargreaves, 2015). First an overview of factors, theories and a model are being presented to get an understanding of the complexity of the field. Then Stoknes' framework will be described.

Previous research

There is not much research to be found specifically on change from air travel to other ways of transportation. Instead the focus in this previous research section is on pro-environmental behavior change. There are two main viewpoints on how pro-environmental behavior change should happen and within them several theories. One view on how pro-environmental action should be brought about, is to work within the systems we have today and try to change the way individuals make decisions on behavior. This can be done either by encouraging individuals to acquire new pro-environmental values and attitudes or nudging them in a certain pro-environmental direction. This view is often held by environmental psychologists and behavioral economists. Another view, held by environmental sociologists, is that to change people's actions, more radical changes in organization of social practices and systems are needed. Both these viewpoints include regarding people as social, but yet other views have given the social human more importance. A possible middle path to the above standpoints is to emphasize social interaction (Hargreaves, 2015).

Factors affecting behavior

There has been a vast amount of research conducted on factors driving behavior change and how it can be influenced, mainly from a psychological and sociological perspective (Baden & Prasad, 2014). Previous models for encouraging pro-environmental behavior have often not been complex enough to really move beyond the many barriers that exists. Research shows that there are at least thirty personal and social factors influencing pro-environmental concern and behavior, and they are often combined in different ways. A selection of personal factors influencing behavior are experiences from childhood, personality, values, sense of control (or locus control, to feel that one has a sense of control), felt responsibility, goals, cognitive biases, place attachment, chosen activities, gender, age, education, knowledge, political views and world views. The social factors affecting behavior are norms, social class, urban-rural differences, religion, cultural and ethnic variations and closeness to problematic environmental places. Pro-environmental behavior can also be carried out because for *non-environmental reasons*, for example to save money or improve health. To make it even more complex the factors are often combined in different ways (Gifford & Nilsson, 2014). The complexity of factors influencing behavior described here, is a reason for the gap between peoples self-reported environmental concern and lack of pro-environmental behavior (Gifford, 2011). One can argue that it is better to discuss sustainable lifestyles rather than pro-environmental behavior, since quite a few pro-environmental behaviors are done for reasons other than environmental (Baden & Prasad, 2014).

These were some of the factors that influence our pro-environmental actions. Now related theories will be described.

Theories for changing behavior - focusing on deliberate and individual behavior

Within the theories of behavioral change there are many theories and approaches focusing on the psychological aspects of individual behavior. Both the theory of Reasoned Action and the later development of it, the *theory of Planned Behavior* focus on the importance of *intention* of a certain behavior, but the latter also added the variable of perceived behavioral control. Intentions are influenced by subjective norms, attitudes to a behavior and perceived control of behavior. Research suggests that higher levels of *self-efficacy* (what we think about our ability to contribute to change) increases the will to take part in actions that could influence social networks (Howell et al. 2015). The related *Social-Cognitive theory* adds that people with higher levels of self-efficacy and a favorable context, will behave more pro-environmental (Sawitri, Hadiyantob, Hadic, 2014). This theory has sometimes been integrated with the *Norm Activation model*. The latter helps explaining altruistic behavior and pro-environmental behavior. Personal norms are experienced as emotions of moral obligation and they predict behavior. They are influenced by a sense of responsibility of doing a certain behavior and knowing that one's behavior has certain consequences (Onwezen, Antonides & Bartelse, 2013). According to both these two last theories people base their pro-environmental behavior on analyzing cost-benefit for themselves, expectations of important others and their own efficacy in carrying out the behaviors (Fritsche, Barth, Jugert, Masson & Reese, 2018).

Building on commonly used behavior models from social and environmental psychology *the Self-Determination model* is a structuring framework for supporting people who are motivated in changing their everyday behavior (Klöckner, 2016). The first stage is the *pre-decision stage* where the individual addresses the question “Why do I need to act?” The intention to change their behavior is formed if they feel that they have a moral obligation to act. This personal norm is affected by social norms. If people who are important to the individual supports pro-environmental behavior, then it is likely that he or she will feel obliged to act. Awareness of negative consequences of the present behavior is also likely to activate personal norms. In the second *pre-action stage* the question is “Which action can I take in order to change behavior?” Attitudes are what mainly determines which alternative behavior one chooses. The alternative that is beneficial or positive for oneself are most likely to be chosen. Perceived difficulties can be a barrier to behavior change. In the following stage, the *action stage*, the question is “How can I implement the changes that I intended to do?” In this stage concrete planning ability and ability to remove barriers are essential. In the *post-action stage*, the behavior change should be stabilized and the ability to recover from relapses to the old behavior is crucial. It is in this stage that the behavior is actually changed (Klöckner, 2016).

Theories for changing practices - focusing on conscious, deliberate and social behavior

Environmental sociologists use Practice theory to understand change to pro-environmental action. In

Practice theory behavior is understood as the way practices appear and develop. Our actions come from our common accepted social conventions and they are reinforced when practices are repeated. The theory criticizes pro-environmental behavior change initiatives for not translating into pro-environmental practices. The theory proposes to instead focus working on where practices and habits are shaped and repeated and on those who educate us or who are role models (Baden, Prasad, 2014). Social practices develop with the values individuals hold, rather than resulting from them (Hargreaves, 2016).

Theories for changing behavior - focusing on deliberate and social interaction

Pro-environmental behavior has often been considered a case of individual choices. However the environmental problems we face today are the results of collective behaviors and how they are perceived depends on collectively shared interpretations (Fritzsche, et al., 2018). *Social interaction* is very important in forming the response of pro-environmental change processes and can either support or hinder the spread of a behavior. It can be argued that both behavior change theories and practice change theories have not fully included the importance of social interaction in changing pro-environmental actions. The gap between value and action, mentioned in the Introduction, is not only individually created, but also socially formed and shared. Through social interaction, individual values and social norms are collectively questioned or reinforced and then changed. Social interactions is important in forming socially acceptable behaviors of individuals. Humans are social individuals whose behavior both creates and is created by their social and material context (Hargreaves, 2015).

Social norms are our beliefs about how we think that others will think or do and they reliably determine pro-environmental behavior. They seem to be fast, intuitive and not deliberately planned and therefore we are often not aware of the extent to which they influence us. Descriptive norms describe what most people actually do, injunctive norms refer to what people generally approve of. Social norms, especially descriptive norms, appears to have consistent effects in pro-environmental behavior change interventions (Farrow, Grolleau, Ibanez, 2017).

People often define their self as members of groups and can think and act as if they are collectives (Fritzsche, et al., 2018). This capacity is crucial when tackling environmental problems. ***Social Identity approach*** considers the concept of self to include both personal and social identities. The social identities are the groups we belong to. Memberships in social groups can be large scale like gender, groups we have chosen like professional groups or interest groups. People tend to focus on the similarities between oneself and one's in-group and on the differences between in-group and out-group members. This categorization cause people's attitudes and behavior to be assimilated to the norms of the in-group. This process of categorizing oneself to belong to certain groups, could encourage or discourage engagement in environmental issues. In-group and out-group relationships and conflicts could hinder the environmental policy from advancing. According to the Social Identity approach it is important to develop a sense of common identity, through activities in small groups with positive environmental norms. That can help group members to create a broader sense of environmental identity.

This identity they then bring with them to other group situations. This approach also suggests that people belonging to the same group, are the best messengers to others in that group, because they are considered trustworthy in their group (Fielding, Hornsey, 2016).

One of the factors that is interesting in the context of this thesis is comparison with others. Humans are very social beings and often compare ourselves with others. This happens in many ways, for example by comparing one's own behavior to others and thus understand the 'right' way to act. It can happen more easily in situations or places where people are close to each other, like in a workplace or a neighborhood (Gifford, 2011).

Inequity or inequality is another factor to take into account, since it tends to negatively affect cooperation. If people see that others, especially those more well-off or famous, are not acting pro-environmental, then people often use that to motivate their own non-action. If others are not contributing, why should I (Gifford, 2011)?

Ways to affect social norms are to provide knowledge and awareness directed towards a person or group, have people show the desired behavior or describe how others usually do. It is useful to combine informing with setting goals, give pledges and give feedback (Fritzsche, et al., 2018). When influential members of a group adopt or agree on a behavior, then they receive normative value. Most new information passes through social networks via people that are outside of one's closest circle. These influential individuals are important in spreading of new behaviors, argue Granovetter (1973) (Baden, Prasad, 2014).

Nudging - focusing on non-deliberate and individual behavior

The theories of Norm Activation, Planned Behavior and Reasoned Action emphasizes our rational, deliberate thinking and behaving according to our intentions. However research has shown that only a third of our decisions are conscious decisions (Baden, Prasad, 2014). Other decisions are made by our unconscious, automatic, fast cognitive thought process. Humans are influenced partly by information, persuasion or incentives, but also by how something is being conveyed and framed. Changing the context where decisions are to be made, can also affect decisions, which is referred to as *nudging*. Nudging tries to develop behavioral change through unconscious processes, rather than conscious (Byerly et al., 2018).

Research on reducing unsustainable traveling

Research for this thesis has also been done to find articles on individuals or groups of individuals that have reduced or quit flying, but not much such research has been found. One paper was found that tries to explain individual air traveling, especially deliberate flight reduction. It looks at both personal beliefs and values as well as societal factors. The study shows that internalized knowledge of the negative environmental consequences of flying, can contribute to reduced flying. This change is often hindered by personal values and structures in society that are pro-flying (Jacobson, 2018). Another

paper explains that the previously mentioned gap between thoughts and action is especially large when it comes to flying (Cohen, Higham, and Reis, 2013).

This previous research has briefly explained part of the context for this study by describing factors affecting behavior and theories focusing on individual behavior, on social practices or on social interaction. These theories all concerns conscious and deliberate actions, but there is also theories describing unconscious, non-deliberate individual behavior. This gives a background to the topic for this thesis.

Research has also been done for this thesis into behavioral change initiatives promoting individual reductions in other means of transportation than flying. From a project within Uppsala klimatprotokoll can be learned that to try out a new traveling behavior is one of the major parts in changing traveling habits. When people have tried out a new way of traveling it is easier to continue with that new behavior (Uppsala klimatprotokoll, 2019). Another similar example of an initiative promoting and studying how more sustainable traveling can be reached is Ett bilfritt år where families had to live without their car for a year and instead use electric cars for example. The aim was to encourage sustainable traveling and see what gains this would give as well as to see what changes has to be made in a city for more people to leave their cars (Inventering av beteendeinsatser, 2018).

Theoretical framework

It is extremely worrying that the more we know about for example global warming, the less we care about it (Stoknes, 2015). That paradox has to be dealt with in order to have a chance of keeping a relatively stable climate. A vast amount of theories exists describing what influences behavior change, but few papers explain how they can be utilized when designing an intervention in a certain context (Baden, Prasad, 2014). Norwegian psychologist and economist Per Espen Stoknes gives in his book *What We Think About When We Try Not To Think About Global Warming*, numerous practical examples of different situations and contexts where his suggested strategies could be used. Stoknes' work focuses on communicating behavior change and his thoughts cover several areas of communicating behavior change. The strategies can be used practically in communication strategies. Stoknes' thinking builds on previous research about pro-environmental behavior change, for example Social identity theory.

Per Espen Stoknes does not agree with the common view that the future looks dark and hopeless because humans are driven mainly by short term thinking. Just like the theories in the previous part of the thesis, Stoknes tries to help us understand barriers to change. Those barriers lies in psychological responses to climate change, he argues. Communication about climate change have so far tried to convey more and more facts, without much behavior changing. But the communication has to connect to how humans actually think and the social reality we live in. The concern for the climate crisis that

around 40 to 60 per cent of the population feel, has to be turned into them actually prioritizing the issue. On many levels of society; international, national, corporate and cultural levels there are strong barriers preventing change. Stoknes argues that for change to happen, one first has to understand apathy and denial on the level of individuals and small groups and then build bottom up support for stronger actions on other levels. So in focusing on psychology, he does not mean that individuals bear all the responsibility for climate change, but that it would be fruitful to work with individuals and small groups and then when these groups and individuals are many, they will be a base of support for policy. Climate change is not an individual, environmental or technical question, but a cultural challenge to be solved at an organizational social level. People must act together, at many places, simultaneously argues Stoknes.

A difference between much of the previous research and Stoknes' thoughts, is that he also describes barriers to behavior change, but he focuses on how to overcome them. Stokes strategies have been chosen as the framework for this thesis, because of what has been mentioned and because they are founded in an understanding of how we as humans function, both individually and collectively. Another reason is his bottom-up approach of changing behavior and individuals in networks and thus creating policy support. Stoknes focus on that the climate crisis is a social issue, is another reason for choosing his thoughts as framework.

The barriers

To help us understand the climate paradox of us knowing more and caring less about climate change, Stoknes points to five different barriers or defenses that hinder climate messages from being heard and instead create resistance. He suggests ways to move beyond these. The defenses are:

1. **Distance:** the message of climate disruptions seems remote, since most of us have not seen them or at least not their major destructive impact.
2. **Doom:** people will just want to avoid climate change, if it is portrayed as a disaster having to be avoided by costs and sacrifice mainly. We do not care anymore about the message that the end of the world coming, because it has been said too many times.
3. **Dissonance:** arises when what we know, is in conflict with what we do, or when our thoughts are in conflict with people who are important to us. We can make ourselves feel better by not questioning what we know. Social relations and our own behavior determines our attitudes.
4. **Denial:** is to ignore, avoid or negate facts we can keep us away from feelings of guilt or fear. Denial is a self-defense, not lack of information.
5. **iDentity:** means that we are open to information that affirm our values, our cultural identity, rather than challenging facts. Cultural identity is more important to us, than facts. We will resist anyone urging us to change in self-identity.

Stoknes describes strategies to move beyond these barriers and those will now be presented.

Strategies for climate communication

The Social strategy: focuses on how the force of social networks can strengthen pro-environmental social norms in order to overcome barriers. According to Stoknes, pro-environmental behavior change has to be done by individuals acting together (relates to the Social Identity Approach). We behave in line with social norms and we adjust to signals about what others in our close networks accept. These norms strongly predicts our pro-environmental attitudes and behaviors. Comparing with peers is more important to us than to make cost-savings or other rational self-interest choices (contrary to for example the Norm Activation model). If one knows that one's neighbors or close colleagues does something pro-environmental, it is likely that one will imitate this behavior. Instead of imitating and comparing with close ones on who have been flying the most for example, we need to start comparing and imitating what we do for a good common cause. Then that behavior will be acknowledged and receive status, affecting the social norms and help people change behavior. The issue will also feel closer and more personal this way. We are all part of social networks and we should try to transform them to care for the climate because then many people can be reached. For example monitoring birds nesting if you and your group happens to love birds or watch ice rinks if you like skating. Those most likely to reach people, are those that are part of the same group, and this relates to Social Identity Approach. One of the best determining factors of pro-environmental behavior, is being part of a pro-environmental network.

Stoknes suggests many other ways to move beyond his barriers like telling personal stories of how one would like to live sustainably, listening rather than debating, focus on the consensus around climate change.

Stoknes means that communication on climate should aim to be social, local and interactive. The barriers Stoknes describes will be possible to overcome when people see that people they know acting for the climate, it will appear more urgent, and personal. Through these strategies, climate communications will feel less universal and more social. This can lead to people saving energy for example. But even more important are the spillover effects to climate-friendly norms, values, attitudes and policy support.

A Story-based strategy: We create meaning through stories. The dark apocalypse story is the one we are used to hearing when it comes to climate. But to move past the barriers, stories needs to be told that convey other imagery and other emotions. Stories helping us understand the transition happening around us, small or large scale. To make people interested in them, they have to be related to human stories, rather than carbon emissions. Captivating stories spreading inspiration and attractive visions of us living healthy good lives in solidarity, with better jobs, lower emissions and a restored nature. If we keep telling these stories, then we are more likely to begin working for them to happen. The well-being story is a narrative about a vision of society where people live together, learning and caring, with increased social justice, happiness and well-being, giving us a direction to go towards. When a story

about a society that most people wants to live in, is being told, then changes to society can happen quickly, according to Stoknes.

Re-framing strategy: The image of climate change as catastrophic, is the most common one in media and Stoknes argues that it will not lead to much engagement by many, because very negative framing often lead to people to avoid the issue. To focus on frames like a better quality of life and better health for ourselves and those we care about, is much more successful in overcoming the barriers, rather than a focus on destruction. To switch from the frame describing all the sacrifices we have to make and instead frame it as many new *opportunities*, is likely to cause action.

Signals and feedback strategy: To keep being motivated and engaged we need to know whether we are on the path to sustainability and for that we need signals and feedback. For example an ecological footprint assessment, complex information being visualized, an individual accounting of CO₂ from all our purchases, follow our personal carbon budget. Some of these signals might be visible to the public and they should be connected to stories to be understood.

Make it simple strategy: If there is not green choices to be made or they are difficult to do, then most people will not do them, so it has to be easy to do right. If most of our everyday behavior is consistent with our climate awareness, then we will avoid much dissonance and thus keep up people's engagement. It is important to keep engagement at a personal level, since together with others, that creates public support for sustainable political and business initiatives.

The explanation of Stoknes' framework is ended here by saying that he argues that humans can act long-term, if such social norms exist, if there is supportive frames for decisions to be made within, if it is easy to do right in everyday life and if stories give a direction of where to go.

METHODS

In this thesis qualitative research has been used since the focus was to gain insights into the problem described and get as much relevant details as possible about thoughts and meaning. Case study research was used to explore the problem using a case as illustration, in a real-life context. A case can be described as a system that has boundaries, of time and space. In this study the boundaries were the time of the interviews, March and April 2019 and Sweden was the location of the initiatives (Creswell & Poth, 2018). The case in this study has been the process of reducing air traveling and the role of initiatives Tågsemester/Vi håller oss på jorden for this transition.

An advantage of case study approach is that it is a thorough and in-depth exploration, giving a rich background for a specific case. Interviews were used as source for data on this process, which can be a problem since the findings rely on a single kind of source. A disadvantage is that the representativeness is weak, it is hard to generalize, since the study only represents a few individuals. Other disadvantages are that the study can be hard to replicate, which can affect the validity.

The individuals were purposely chosen for this study, because they are part of two initiatives promoting train travel and staying on the ground, which both relates to reducing or stop flying. Data for the thesis was collected from multiple sources; peer-reviewed articles about pro-environmental behavior change (see Literature list), Facebook groups of Vi håller oss på jorden and Tågsemester and the interviews. An interview guide were used when conducting the qualitative semi-structured interviews, since this helped gain insights into thoughts and behavior of participants. The final thesis is an in-depth description and analysis of the case (Creswell & Poth, 2018).

Recruitment of interviewees

Advertisements were published in the Facebook groups Tågsemester and Vi håller oss på jorden, in order to find respondents who had reduced/quit flying or had considered this. All interviewees knew from this advert that the purpose of the interviews, was to investigate how one goes from being aware of climate change, to wanting to fly less/stop flying and how the initiatives had supported this transition. Overall criteria for including interviewees were that they were over 18 years of age and still able to travel. Around 50 individuals offered to be interviewed. Because of time constraints for this study, a sample of 15 were selected. Of these, 8 were participants in Tågsemester and 7 participants in Vi håller oss på jorden.

These were mainly selected by convenience sampling. It was not thought to be of major interest to the study to have any specific characteristics, so no information relating to this were asked for in the advert. But when most of those offering to be interviewed had names that sounded traditionally female, those who had names that sounded traditionally male, were favoured, aiming for some equal representation. This led to a third with male sounding names and two thirds with female sounding names. One person

offering to be interviewed were not chosen, since they described in their advert response, that their decision to stop flying was made many years ago. It was considered more relevant with people with more recent behavior change. Four who offered to be interviewed, did not answer when they were contacted or answered late, so they were not selected. Nineteen were contacted.

Many of the chosen respondents were participants of both initiatives. Some questions were specific to one initiative. In each interview the respondents were asked about one initiative. But for the interviewees it was in some cases hard not to mix up these two initiatives and or other initiatives that they were part of. But since the importance of the study was not to gain insights on exactly how many thought what, but rather the kind of thoughts the interviewees had, it was not considered a problem.

Semi-structured interviews

The interviews were conducted in March and April 2019. The interviews were held in Swedish by telephone, which made it possible not to have any geographical constraints when it came to choosing interviewees. A semi-structured interview guide were used and the interviews recorded (see Appendix 2). A translated version of this guide can be found as an appendix in the end of the thesis. The interviews lasted on average 30 minutes each. The interviewees were informed about their rights and anonymity. The guide contained some questions only for the respondents from Vi håller oss på jorden. The semi-structured nature of the guide enabled a possibility to follow what the interviewees were saying, by changing the order of questions, going back to follow up on questions or asking them to develop their thoughts when they wanted to. The guide were altered slightly, after the first interviews; the order of the questions were changed and one question was not asked: How have you handled social and emotional difficulties? This question was removed because the respondents answered it anyway or it did not appear relevant to the study. The questions were build on the research done and the framework for the thesis. After that all questions were covered by all interviewees.

Characterizing the interviewees

For this thesis members of the Facebook groups Tågsemester and Vi håller oss på jorden were interviewed. As mentioned in the introduction Johan Rockström refers to Simon Sineks' idea that 18 per cent of the population needs to believe a common vision for change to start happening. Since Sinek argues that already 12 per cent are changing behavior, we need another 6 per cent from the group of people who are passively aware and worried, but not active themselves (Svergies Radio, 2015). In order to receive more insights into how this group of people can be helped in changing the behavior of flying, interviewees who had already formed an intention to act or had already began to change behavior were chosen. It was made clear in the advert that these were the people needed in the study (see Appendix 4). They were thought to be able to describe their personal process of reducing air travel. This means that there has not been any intention for the sample to be representative for the population as a whole.

The individuals that were interviewed had been engaged in the issue of not flying or reducing flying for different amounts of time, from many years to half a year ago. They were students, employed, unemployed, retired or on parental leave. Some had children and grand children. They had or have had employments like engineer, preschool teacher, analyst, social worker, police, business consultant, manager, or working in sales. Their age were from 19 to 64 years of old. The relevance of this information is to show that there was a spread in who they were (see Appendix 1).

Some questions related to strategies used in the initiatives that are similar but still different and one question were specific to the those that were members of Vi håller oss på jorden and supporting Flygfritt 2019/2020. 7 of the respondents were asked about questions relating to Vi håller oss på jorden and 8 were asked about questions relating to Tågsemester.

This small sample cannot be claimed to represent individuals generally who consider reducing or have stopped traveling by air, but it gives insights into how individuals like these can think and act. The main reason not to do more interviews was the time constraints of the study.

Analysis of data

Audio were recorded and the 15 interviews were mostly transcribed verbatim. Parts where the interviewees left the topic were left out of the transcripts. Repetitions and unfinished sentences were summarized. All data was reviewed several times to look for patterns and themes. The interview guide questions were used roughly as themes, with some changes. They were divided into two main groups of themes related to the behavior change process and to the initiatives (see Appendix 3). Then the data was gone through again and organized by separating each answer or part of answer from the transcripts, to be placed under the relevant theme. Some answers led to a need to adjust theme headings. This process of deciding on groups of themes and themes went on for some time, with several revisions. This more deductive coding of looking for information, was mixed with a more inductive and exploratory coding, where the transcripts were read more openly, to see what was to be found. Some of the answers in the transcripts were less relevant.

The text in each theme was written by summarizing the quotes in each theme. The quotes that best described each aspect in the themes were kept as examples of how the interviewees had explained that aspect. There were many relevant and interesting answers to select among, but the ones presented are those that represents the most answers or that shows a variety to the answers. They were also chosen to represent the interviewees so that everyone was included with at least one quote. The quotes included in the thesis were then translated into English. Where interviewees mentions their wife/husband this word was replaced by partner. The names of the interviewees were changed to pseudonyms and these are gender neutral names, since gender was not considered important.

How many interviewees that responded what, was not the focus of this study, but some aspects were described in specific numbers, when it appeared to add value to the results. In some cases descriptions like most, several or few were used to give a hint of how many interviewees mentioned certain aspects. Included in the results section is one table describing frequency relating to the first research question. The numbers of the frequency of certain answers were drawn from the mentioned document with all the collected transcripts.

RESULTS

Presented here are the answers from the interviewees about how their behavior and habits have changed from traveling by air, to traveling by rail and what the initiatives Tågsemester and Vi håller oss på jorden/Flygfritt 2019 has meant for this transition. There are two main themes which brings up different aspects of this behavior change. There are many practical aspects of air or train traveling that could affect traveling behavior, but this thesis has focused on other aspects like what the role of one's social network and an understanding of the problems relating to flying. The analysis of the answers is based on the framework of Per Espen Stoknes, described above.

Theme 1:

The process of reducing air traveling

The first theme tries to answer the first research question: *How does the change process look like for people who change behavior from being aware of and worried about climate change, to reduce their flight travel?* It looks at the process of reducing air traveling and important aspects of that. Mainly the role of one's social network is brought up; how this reacted and supported reduction in air travel, how the respondents have tried to influence their network and social barriers to change. This theme also looks at the importance of understanding the environmental consequences of one's air traveling as well as how the new behavior of train traveling is perceived according to the interviewees.

Many of the interviewees have had a pro-environmental engagement previously, but for most of them, the change to reduce or stop flying has happened quite recently. *"In other areas, I started earlier, to change my behavior. I have always been a vegetarian, I have bought organic for many years and almost only second hand. It feels like flying came quite far down the list of things I could consider changing. [...] It is kind of the gold edge on life"* (Robin) The thesis will look at reasons for this, relating to lack of understanding and social support.

Table 1: Themes that relate to the process of reducing air traveling:

Themes	Content
Increased understanding	Increased awareness of environmental consequences What happens when understanding increase? How can understanding be achieved? How they have previously motivated their flying?
The close social network	Response and support from the close social network Affect one's social network
Deciding to reduce or quit flying	Feelings about quitting/reducing air traveling
Social barriers to change	People in the close network as the main barriers to quit/reduce flying
The new behavior	Train traveling is described as positive for several reasons

Increased understanding

An important factor when changing behavior from air to rail traveling is according to the interviewees, to understand the environmental consequences of flying. Most of the interviewees describe that they and people they know might generally have been acting pro-environmental previously, but kept flying, because they did not understand how great it's climate impact was. Several describe an uncomfortable feeling, here explained by one of the respondents. *"I have for many years felt an uneasiness about that here I'm sitting evicting incredible amounts of waste, just because I am going to satisfy my own need for adventure"* (Kim). To counter this feeling the interviewees have come up with arguments for flying, in order to be able to motivate for themselves, that they acted against their knowledge. The arguments for still flying, have been that the respondents want to treat themselves with a trip or have been invited by someone on a trip, that they had to fly in their work, that their partner wanted to fly or that they had to or wanted to fly to visit friends and relatives abroad. Other general reasons for flying mentioned by the interviewees are that it gives a change of location, relaxation, adventure and new experiences with new nature but also seeing new cultures and people and understanding the world better. *"One need is to discover new places and cultures"* (Charlie). Before acquiring more understanding, some of the respondents describes living quite pro-environmental and then thinking that then it is okay to fly. Increased knowledge of the severity of the climate crisis and particularly understanding that the emissions from flying is extensive, compared to other individual behaviors is described as important by 10 of the interviewees, in their decision to change behavior. Before changing behavior, the interviewees did not know what their largest impact was. *"What made me somehow react, was to realize that a sustainable carbon dioxide budget is around one or two tons. And we in Sweden is at 10 on average. And individual flights are such large items, that all of a sudden it became obvious that this, I cannot continue with"* (Billie).

The interviewees brings up at least one of the barriers that Stoknes have identified as preventing change; cognitive dissonance, when awareness and behavior do not match. Interviewees first reduced their cognitive dissonance through motivating their behavior in various ways and could then keep flying. But when the understanding of the impact of their flying increased, they felt more cognitive dissonance. Then they reduced it by changing behavior; flying less or quitting flying. The arguments for flying could maybe be useful when framing alternative modes of traveling. Stoknes means that we know more now about the climate crisis and that has not contributed to us changing behavior, so this might seem to contradict what he says. But that might depend on how knowledge is communicated. He for example suggests that it should be more personal, simple and interactive, as done in for example environmental footprint calculators. From that perspective the above findings is consistent with Stoknes' framework.

The way that the respondents have increased their understanding varies. Four of the interviewees, says that using an ecological footprint calculator has been a turning point, because then it became very obvious that flying has a large impact on their personal emissions. Five describe the media reporting as part of how they became aware of the problems with flying. Two respondents describe a particular TV program and a film as part of a turning point. (7:18) *"Four years ago we watched a good documentary called "Cowspiracy", where they explain how meat consumption affects the climate. As a result, I became more interested in climate and the environment. Since I was little I've been interested in nature and environment but not in the sense sustainability, but more flora and fauna. Caring about that, was what triggered my change in my behavior to be more climate smart and environmentally friendly. After seeing the documentary, I realized that the way I behave, is not compatible with my hobby. If I want to keep it when I get old, I have to change my behavior"* (Torild). Public front figures like Greta Thunberg and her book are mentioned by two interviewees as very inspiring. *"It has definitely been inspiring to see that if someone who is younger than I am, can do it, then I can do it too"* (Torild). One interviewee explains that they used to fly extensively, 5 times a year. But then it began to chafe and the family decided to travel once a year only. But then even that amount of flying felt too much, when they got a closer feeling of what climate crisis can be like. *"But then there was last summer the forest fires, the drought and I felt that this is beginning to be real, this is really frightening [...] It cannot be ignored"* (Lin). *"There is a common denial. Prominent politicians like Annie Lööf who go out and say that no, we do not need to fly less and we are the alliance's green voice. We will invest in high speed trains and we will invest in technology development in the future. But with the knowledge situation that exists, that just is not sufficient. Then came Greta Thunberg and I read her book Scenes from the heart. No, now I lost the desire to fly, I can't"* (Lin). The Vi håller oss på jorden is an initiative that runs the campaign Flygfritt 2019 to encourage people to promise not to fly for a year. For some interviewees they helped convey this increased understanding.

The interviewees had different ways of acquiring increased understanding of the impact of flying and it did influence them to form an intention to change behavior. Looking through Stoknes' framework this could be explained by that the information influencing them at least in some cases was simple, like in

the ecological footprint calculators mentioned. These also function as a signal and feedback of if one is on the right path of living sustainably or need to change behaviors. Above is also one of Stoknes' barriers mentioned; denial. In this case a collective denial in our society.

When their knowledge grew, most of the interviewees have felt that they need to and have a moral obligation to change behavior to reduce or stop traveling by air. To know about climate change and still continue as if it does not matter, is not possible, say one respondent. Another one means that if one believes that one can make a difference, then one has a responsibility to act. *"Yes I have (felt a moral obligation). The way I act, will influence my future. And the future of my children's and other children's future. It won't end when I die. I absolutely feel obliged to take care of our planet in the best way" (Torild).*

The close social network

Support and response

The support and response from one's social network and what that means for this behavior change, is brought up here. Interviewees describe that there have been and is a strong social norm of that traveling extensively and seeing the world, gives you status. The norm is also to do this traveling by air. *"The difficulty (with reducing flying) is that there is a norm of or a status in flying and discovering new places. I have traveled a lot earlier. And enjoy discovering new places. [...] There is a norm that it is cool to fly" (Charlie).*

Since to reduce or stop traveling by air is an unusual choice, it could be a barrier not to have support in this change. Some of the respondents describe that they have had some support in this change and some non. Not having support makes the decision to change behavior harder, but it does not appear to be determining for most. *"(But) then there are many friends around who do not take a stand in the same way we do. And that makes it harder, but not crucial" (Charlie).* The interviewees mention three different groups of people whose support has been important in their behavior change. Five respondents mention having support in their partner only and some not even in a partner. Many describe their partner's attitude as very important in their decision, since vacations is something often done together with one's partner. *"It was quite important that my partner also thinks that this is interesting" (Charlie).* For one interviewee the engagement of their children have contributed to their behavior change. *"The children most clearly (influences what one does), but also friends (Alex)."* One interviewee describe how they have tried to influence their parents to avoid traveling by air on the common holidays of their families. Two describe becoming a parent or grandparent being a reason to change behavior. *"...yet another factor is that one and a half year ago, I got my first grandchild [...]. Then those thoughts started that well, this is about that this is about her life. Maybe she will live for 90 years ahead and what does it look like on earth by then? It's on her and her peers that I think of" (Kim).* Becoming a parent also made one interviewee feel closer to nature and to think more about the

well-being of others. People in the close social network can be an important support in the change as well as people one forms a quick personal connection to, like the lecturers in this case.

One interviewee was helped to change behavior by attending a talk where the lecturers among other things talked about how they had made changes to their lives. *“They had stopped flying and that that was really no major sacrifice, they thought. I had just accepted an annual volleyball tournament organized by our company. [...] And this year this tournament was in South Africa. And then you get a part of that trip paid. And then I had accepted it and were about to join. After this Klimatklubben (the talk), I had stomach ache, felt really bad. And chose to decline. I canceled this trip” (Mika).*

One respondent describe that a colleague helped them to overcome the perceived difficulties of train traveling and then made it appear doable. One interviewee explains that they wrote about their train travels on social media and then neighbors who are usually flying frequently, responded that they were going on vacation by train. Previously the families have been comparing cheap flights.

Two respondents mention having people in their close social network that has been very pro-environmental in general but still been flying, and has therefore not been much support.

The social network of the interviewees vary in their response to this behavior change. Some describe that they do not care about what other people think or do. While others say that they are very much influenced by what others do or think, especially their children. Some interviewee networks are indifferent, opposed to or question their behavior change. *“Sometimes it is lonely. Like doing a radical thing” (Tony).* One respondent’s family have been surprised and somewhat positive by the effort they are willing to make, to avoid flying. *“Getting a positive response, is also something that confirms that what you do is good” (Torild).*

The support from the close social networks of the interviewees varied, but since we like to follow our group, like Stoknes says, the support was valued when present. Generally however, they were mostly alone or almost alone in this often controversial behavior change. Stoknes’ thoughts about people wanting to compare with and imitate peers, in this case around a good common cause, is confirmed by many interviewees, when they describe being influenced by or influencing their children, older relatives, lecturers they met, neighbors, friends and colleagues. An explanation of this, if using Stoknes’ framework, can be that when comparing or imitating with peers, it appears easier to do the change since one can get practical tips and also one can think that if they can, I can.

Table 2: Factors that contributed to changed behavior:

Factors influencing interviewees to to reduce or quit flying	Interviewees mentioning this factor
Increased knowledge	8
Footprint calculator	4
Children or grand children	3
Some one one knows (apart from partners or children)	3
Vi håller oss på jorden or Tågsemester	3
To know about alternative ways of traveling	3
TV programs	2
New partner with similar values	2
Media debate	2
People in media	2
Role models	1
To view sustainable living like a challenge	1
Education in school	1
Problems came close, like forest fires or droughts	1
Politicians not taking responsibility, then oneself has to do something	1

There is often a combination of factors leading up to a behavior change, like having children and role models and increased knowledge.

Affect one's social network

Here the interviewees talk about if and how they try to influence others to reduce or quit flying. Eleven of the interviewees try to affect their social networks by acting as role models and showing people in practice that it is possible to take the train instead of flying. Several also mention that they try to be encouraging when someone they know travels by train. Six interviewees report that others in their close social network have followed their example. One respondent describes that their friends decided to join their train travel to Italy for example. Another respondent with family inspired their neighbors, who generally acted environmentally friendly but still usually traveled by air, to take the train. *“After we traveled to Paris by train, we inspired them (our neighbors) [...]. They are of course also*

environmentally interested but thought that it was too difficult. But when we went by train, they then took the train to where they were going.” (Inge).

Inspiring by taking the train and talking about that, is one thing, but bringing up the subject of reducing air traveling, is another thing. Most of the respondents describe the topic of reducing or stop flying as a sensitive topic, since many people now have some awareness of negative environmental consequences, but still want to fly. *“Many people know that it is bad to fly, they are basically ashamed” (Tony)* One can even be looked at as odd for questioning air traveling. *Yes, in some contexts it is (sensitive). People can think that you are a little weird” (Kirsten).* One interviewee gives an example of how strong they consider the social norm to travel by air to be, when saying that talking about reducing or stop flying, would make you lonely. *“I have felt that if you talk about such things, then you will not get friends” (Vide).* Most of the interviewees are careful about choosing the right time and place for bringing up the topic of not flying. One respondent tries to bring up facts about flying and the climate, at dinner parties. This person also describes the topic as being very sensitive.

Trying to influence others through social media, like Facebook, can feel less confrontational, but does not necessarily result in much response. *“Yes I have been trying very much” (Kim).* The respondent describes how they publish Facebook posts, for example about how serious the situation is. *“No one answers and then you can despair a little” (Kim).*

For others however, the topic of reducing air traveling does not feel particularly sensitive. An interviewee means that it is a good time to maybe talk a little about flying when it comes up naturally like when talking about the summer vacation. One respondent describes that how one brings up the subject is important. *“I try to affect but by trying to convince someone. I talk about my own behavior hope that that will then spread. And I know that it has already done so, especially in my family and parents. I can be a questioning create discussion, but not in a negative way. [...] I have rarely felt that it is sensitive, because of the way I address it. It is more questioning; how do you think? How do you feel about flying? What do you think? And then create a discussion. The feeling is that many understand that aviation has a great climate impact, but few do anything about it” (Charlie).* One respondent even describe that people do want to discuss air traveling. *“many want to talk about it” (Alex).* One respondent describes having inspired colleagues to travel by train at work. An interviewee in their twenties explains that it is easy to bring up the topic in that age, since people often then see the value of traveling by train. One interviewee describes having had interesting and heated discussions with family and friends about flying.

There are also interviewees who have in their network on Facebook people who do not believe in climate change at all. One respondent describes having given up trying to debate with them, because they have no basic knowledge, so there is no point in talking with them.

For one respondent, deciding not to fly, is a private decision that they do not feel a need to discuss with others. They have joined Flygfritt on Facebook, so it is public, but not taken it further than that because this is their private decision.

The interviewees try to affect others to also change behavior, by being role models and bringing up air traveling in various ways. That relates to Stoknes' social strategy of humans wanting to compare and imitate their close social network. These close ones that we feel trust for, he argues, are the best messengers of climate related messages, like reducing air traveling. When the interviewees act as role models showing how it is to travel far by train, it appears easier for others to follow, because one can relate to these people one knows or get practical tips. That relates to Stoknes' make it simple strategy. It also relates to Stoknes' social strategy; people see that people they know act for the climate and that makes it feel urgent and personal. To bring up the topic of flying is more or less sensitive, which could be explained by people wanting to follow social norms and they have been to fly. Posting on social media might be less of a provocation of the norm. How sensitive the topic is for others differs, depending on how the topic is brought up and what views the others have. Bringing it up like open questions about how one feels about climate change for example, seems to lead to discussions, rather than resistance.

Deciding to reduce or quit flying

Deciding to change behavior by reducing or quitting air traveling means new opportunities, but also losses of other possibilities. Alex describes the decision to fly less as being frustrating, since they love to travel to places that are practically impossible to go to without flying (because it would take more time than their holiday allows them). They are used to traveling by air maybe 5 times a year, so to reduce that to 2-3 times in a 5 year period is a major reduction and change to their life. Traveling abroad to places closer does not appear very attractive. Most of the respondents could feel some sadness the loss of traveling opportunities, even if it was minor for most. *"Maybe when you think that you change something to something new [...], you take away something fun from my life, and now my life will stop being fun. It is the most difficult thing when you consider making such a decision, that you think that now my life will be gray and boring"* (Vide). All of the interviewees have despite this loss, formed an intention to reduce and quit flying, because of new values of wanting to live more sustainably. *"(But) what makes me decide this, is an even stronger value"* (Charlie). *"It's a time that is over and it's a bit sad. But in this case not so much. It is more a grief that oh, what situation have we put ourselves in globally"* (Billie). *"Rather, it feels hard to have been flying much. It does not feel like a sacrifice, but good to do something for the climate quite simply. It outweighs all negative aspects"* (Billie).

Most respondents were not troubled to a large extent by potential losses. The reasons for this were for example that they have already been traveling extensively and therefore do not feel the need to keep doing it. *"No, I don't think it's that hard. I have traveled a lot in my life. I even worked at an airline."*

Right now I do not have that focus actually and not that interest. So it's not a major sacrifice for me” (Ellis). One had not been flying frequently and therefor did not feel that it is especially hard to change behavior. Two respondents did not feel much need to travel far by air, because they were content at home. “I have the big advantage that I have my dream here where I am. So I don't really want to spend a lot of money on flying here and there. So that's why it's not such a big problem” (Inge).

Many interviewees describe that it is a great relief when their behavior is in line with their knowledge and understanding. This can be a motivator to changed behavior. *Yes it is very motivating and a goal. It's very lovely (Charlie).* When asked how this felt the respondent says: *“On the same day that I canceled (the air traveling trip), it felt like yes it was a bit sad that I didn't get to see South Africa and get to play volleyball. But it passed over and after a few hours I felt an extreme relief, it felt so nice to not have that bad conscience” (Mika).*

The decision is a relief from cognitive dissonance since at least for a year, the interviewees do not have to struggle with their actions of flying going against their awareness of climate consequences. When the interviewees describe why they are not especially troubled by their decision not to fly, they seem to look at this and frame it as easy for them. That could relate to the re-framing strategy of describing the change as something constructive and positive rather than a loss. The respondents describe that they make the decision because they hold new values. They now value acting climate responsible, more than following the norm to travel on vacation by air. Another advantage of deciding not to fly is that once they decided not to fly, traveling by train seemed easier for some.

Social barriers to change

The social barriers to reducing or quitting flying are described here by the answers of the interviewees. Not being able to see relatives in places that is hard to go to by train, is described as being the main problem with not flying, for those in that situation. Ways to handle that, according to interviewees, is to travel less often, to travel one way by train and only fly one way, as well as avoid other travels.

A difficulty with not flying, is for some respondents that their children will not be able to travel the world in the same way that they have. *“I can however feel some sadness that my children, that have not at all travelled as much as me, not will have the same opportunities to see the world. I have been almost everywhere. I can feel a sadness that I have traveled at their expense” (Kim).* *“When we look at holiday pictures and my son says can we go here and I say that, yes, we will. It is the part that I find the worst” (Tove).*

Being invited on a trip abroad by friend and family can be problematic. One interviewee says that they broke the promise not to fly in 2019, when invited to a wedding of a relative in another continent. But the respondent still feel that they got a sense of being able to take a stand and do something, even if it did not work out fully this time.

When asked about social barriers to reducing/stop traveling by air, the respondents mention not or rarely being able to see relatives in places that is hard to go to by train as difficult. Being invited on a trip where one has to fly is another problematic situation mentioned. A sadness that one's children will not be able to travel the world in the same way as they have, is brought up by some. This relates to Stoknes' thoughts on that humans wants to belong to their close social network and that not being able to see these close one's as much, are the most difficult social barrier to reduce or stop flying.

The new behavior of traveling by train

Here is brought up how the interviewees perceives the new behavior of train traveling. Of course these answers are from people who have chosen to travel by train and are only representative of themselves, or perhaps people who have made similar choices. The experience of train traveling is described as positive by almost all interviewed. Several of the interviewees have recently traveled by train or are planning to do so in the near future. One respondent mentions that they are planning a trip to Paris and that the kids are very enthusiastic and do not seem to miss going to Thailand. Some describe thinking that previously they have thought that with train, they will not be able to go to some places. *"Then you notice that there are very many nice places in Europe that you can go to" (Vide)*. The respondents describe traveling by train as positive, because one meets more people who want to talk. *"People you meet on trains, are more open to contact" (Kirsten)*. The traveling experience with train, is also much less stressful according to at least one interviewee. One can also use once time better, move around and it is more spacious. *Emotionally, I am much less stressed out by going somewhere (by train). [...] Everyone is more relaxed and takes it a bit more as it comes. One can do so much more of once time on the train. When traveling between Stockholm and Copenhagen, it is 5.5 hours, but I can sit and read or study or sleep a little if I'm tired, I can have lunch, I can go up and stretch my legs. There's more space. It's just a much more lovely travel experience than if you fly" (Torild)*. One has to think differently and see the journey as part of the vacation and make the most of it by stopping in different places. *"You have to live with the fact that the train takes longer, but you can do things along the way. Now on my way to southern France, for example, I had several hours in Paris. That you would not get if you traveled by air. You have to make the best of the situation. It was very nice" (Torild)*. One cannot compare air and rail traveling, they are two different things and one has to think about them in two different ways, one respondent means. Some interviewees says that air traveling for them and in some cases even among their friends seems shameful and outdated.

The advantages of train traveling that the interviewees describe here, can be useful when one is re-framing train traveling as opportunities and positive experiences, in line with Stoknes' thoughts.

Theme 2:

The importance of Tågsemester and Vi håller oss på jorden

The second theme tries to answer the second research question: *What has the strategies for communicating behavior change in Tågsemester/Vi stannar på jorden meant for this transition?* It brings up the role of the two social networks in this transition. The two main methods that is present in the initiatives for reaching and affecting people are brought up; sharing inspiring stories and making a promise not to fly for a year. This theme also looks at spillover effects on other behavior.

Table 3: Themes that relates to the initiatives

Themes	Content
Supporting initiatives	Supporting communities with others in the same situation and what that means
Sharing inspiring stories	Inspiring stories of train traveling and people who reduce/quit flying and what that means
Promising not to fly	Committing to not fly for a year and what that means
Spill over to other pro-environmental behavior	Engagement that spill over to other areas and how that happens

Supporting initiatives

The initiatives have played an important role for all the interviewees in this transition, as a community of other people in this transition. They have been very appreciated and supportive for all interviewees especially since it is mostly a very unusual and controversial behavior to change. Five interviewees say that the initiatives have helped them in forming their intention not to fly and seven respondents say that the initiatives have helped them to strengthen their decision. One respondent refers to the Tågsemester group, and says that it has helped them in the massive resistance in their surroundings. *“It means that you as an individual do not feel alone in your stand to stay on the ground” (Kim). “I have a compact resistance in my surrounding. Not from my partner but from other friends that completely ignores my position to stop flying. And I still have. I’m working on that. I’m quite alone in that decision, or completely alone [...] It is quite easy to despair otherwise [...]” (Kim).* Another respondent describes the importance of knowing that there are many who cares about the issue of reducing air traveling and that it is not strange to do so. *“I have noticed that during the autumn when I have read very much about the climate and joined several Facebook groups, I am very much affected by that I notice that there are others who care very much [...]. From previously having thought mostly on my own and thought that why should I care about this, there is no one else who cares about this. Then one realizes that there are very many who does. To note that there are many who care about this. Then it feels like I’m not weird if I make these choices” (Billie).*

When having changed behavior, support to keep the behavior can be important. For all of the respondents the Tågsemester group and Vi håller oss på jorden/Flygfritt have reinforced their wish to reduce/stop flying. *“Everything that reminds me of why I should fly less, does a great deal. The respondent describes being engaged when hearing something related but that feeling then fades away. When you are reminded, you keep it up, right, this is what I believe in. So that's crucial” (Charlie).* When asked about if there is comparison between participants in the Tågsemester group or Vi håller oss på jorden, most say that there is no comparison of who is most pro-environmental, in a negative sense, but rather a very positive and supportive atmosphere of learning and sharing. For some interviewees the initiatives was the ones to increase their understanding of climate effects of flying.

Many respondents describe being influenced by or influencing their children/older relatives, lecturers they met, neighbors, friends, colleagues as well as people and personal stories in the Tågsemester group or Vi håller oss på jorden group. That can be explained by Stoknes' framework as people wanting to follow what close others do, in this case imitating for a good common cause. He means that the best climate communication messengers are people that are part of the same social network. To have a community of people who cares about this issue and who are in the same change process as oneself, can be a support in forming one's intention to change behavior. A community like this also reinforces the will to reduce flying or stop flying. Stoknes also means that we need to act together, like in these initiatives, and through that create bottom up support for policy change.

In the Facebook groups, it is visible how many people are members in Vi håller oss på jorden or Tågsemester or have signed up for the promise not to fly, Flygfritt 2019, but most of the respondents do not think that that information is important to them and their behavior change. Some of them thinks that it can be interesting to know and make them happy to see that many have joined, but it is not crucial. Knowing that the groups have thousands of members made it easier for one interviewee to join. One member means that when the group passed 50 000 members one understood that it was a factor in society to be listened to. To some it does matter because it might inspire others to join. One respondent report that when seeing that others join, including famous people, it makes them want to be part of the initiatives. Another interviewee describes that even if their decision would be the same, they are affected by knowing that so many others want to stop flying and still keep traveling. *“I don't think I had changed the decision I made, but you won't be so tempted to fly, when there are so many others who are eager to stay on the ground and still get around...” (Vide).* But the interviewee thinks that it can be reinforcing.

To know that there are many others in the initiatives, who care and do something about this issue of air traveling, is mentioned as important, and can be related to Stoknes' thoughts on the importance of visible social action, to see that others act for the climate.

Sharing inspiring stories

The interviewees have all found inspiration for changing behavior in the Tågsemester group and Vi håller oss på jorden/Flygfritt. One of the reasons for that, is the many concrete personal stories in both initiatives. In Vi håller oss på jorden the stories are mostly posted by the administrator/founder of the initiative and are about people who have decided to not fly and gives their personal story. In Tågsemester the stories are mostly posted by members who are or have been train traveling. They describe various experiences and places, often in an engaged and inspiring way. The interviewees describe that through the initiatives, especially Tågsemester, they get an insight into all the opportunities and as one interviewee explains, hears about places one has never dreamed of seeing by train traveling. *“Instead of feeling that you miss something, you see the possibilities. It is not only that you refrain from something, but there are actually many good alternatives. I think this is almost the best with this group” (Robin).* One respondent explains that traveling long distance with train has seemed difficult, but the support from the Tågsemester group has made switching to train possible. *“I probably had a hard time thinking of taking the train to Spain, because it is so far. But I’ve probably changed that view because of things I’ve read that others have done” (Kaj).* Other respondents describes that traveling with small children has seemed very difficult and when reading about others doing just that, it makes the change easier. Reading these stories is a confirmation that traveling by train is possible. *“There are people in the same life situation as myself with quite small children who share concrete tips. And if they can, then I can.” (14:13)*

An important aspect of the initiatives is sharing of inspiration in the form of engaging and attractive concrete personal stories. This relates to Stoknes’ re-framing strategy of framing the change as opportunities, rather than sacrifices and losses. Stoknes argues that meeting face to face or word of mouth is the best way to communicate and one can say that that is what is been done the Facebook groups of the two initiatives. The stories are connected to concrete humans and not to abstract phenomena like carbon dioxide, which increases the likelihood of people to care about it, according to Stoknes. The sharing of inspiration and tips help making the transition easier and thus more likely, which relates to Stoknes’ make it simple strategy. It also connects to Stoknes’ thought on that climate communication should be social, interactive and in some sense local, since the communication in the Facebook groups of the initiatives is about people in various place and there is much interaction. The personal stories about people not traveling by air and people traveling by rail, also relates to the story-based strategy. The stories strengthen the choice to go by train and not to fly. They affect the interviewees attitude and values relating to traveling. These stories relate to Stoknes’ social strategy of formulating a common vision of how one wants to live and where we want to go and of how a sustainable life can be. Sustainable well-being stories that can help us understand how a transition can look like, as Stoknes means. The stories are written individually in the initiatives, but together they form an image for the reader to see and take part in creating. The stories contribute to a new social norm for the readers, participants and their social networks. To see people in once network acting for the climate, makes the issue more personal and urgent, Stoknes says.

Once you have made the decision not to fly, the act of traveling by train seems less hard. *“But at the same time it feels easier to choose the train or other means of transport once you have promised it. Although I have not promised a specific person, it is still a promise” (Torild).*

Promising not to fly

To promise not to fly for a year as in Flygfritt 2019, is very appreciated by the six interviewees who have done so. They even find it to be a relief. It becomes easier when they do not have to consider possibilities of flying. *“It becomes very obvious to yourself that you have clear frames. It's pretty nice” (Vide).* Also, to promise not to fly for ever would have been much more difficult, mentions at least two interviewees. To just reduce flying would be more difficult in practice than just not fly at all. *“But I would never be able to make my family promise to never fly again [...] . Just flying less, becomes so abstract. I think that total abstinence for a limited time, works well for me anyway” (Billie).* Ellis describes that they joined Flygfritt 2019 because they were not planning to go on a trip anyway, for economic reasons (but also environmental) and then they might as well support the initiative.

Giving a pledge not to fly for a year through Flygfritt 2019, have helped the interviewees who have done so, in making the change easier, since one does not have to consider the possibility of flying for that year. The fact that it is a promise for one year, makes it easier than if it were forever and thus making the threshold lower for people who could potentially join. Promising not to fly for a year is also a signal to oneself and others. This relates to findings in other research (Uppsala klimatprotokoll), that getting the chance to try out a new behavior is important in changing traveling behavior.

Spill over to other pro-environmental behavior

This part of the thesis looks at spillover effects both generally and related to Vi håller oss på jorden/flygfritt 2019. All the interviewees now have wider engagement for the environment than to reduce or stop flying and for some the initiatives have been important in this change. The act of reducing stopping traveling by air, have for around half of the interviewees, not led to more engagement than they had before, since they already had a wider engagement previously and acted pro-environmental. For the other half of the interviewees their flying reduction or stopping, spilled over to a wider engagement. Examples of this is wanting to buy a cargo bike instead of a new car, increased knowledge and a wish to create a lifestyle with a small climate footprint. *“Yes it has (influenced by behavior) [...] I'm going to put up solar panels on the house for example [...] so that is connected to transportation, because hopefully I will be able to charge my electric car by myself [...] It makes me think wider, what else can I do...” (Kim)?*

Some respondents mention that they have understood from the group, that one can make a change as a member and that the initiatives can have an impact. Two respondents describe how their private

engagement developed to a new way of looking at their actions as something bigger: *“Something that has only been my private, has become a bit political and it is new to me” (Ellis).*

The promise not to fly for a year, in the Flygfritt 2019 or 2020 initiative, includes both private and work-related travels. That can mean that some will not join it because they fly in work. But it also means, as some of the respondents say, that their decision privately, spill over to their work. They try to influence the traveling generally at work or discuss their own work-related travels. It can for example include engaging colleagues in traveling by train to common a sports activity abroad, discussing the travel policy with the company leadership. *“We are a few who will be traveling by train to next year's volleyball tournament in Russia. I have had a discussion with the company's management, about looking at the travel policy. I will be involved in more environmental work at my workplace” (Mika).* Another interviewee now takes the night train for work related meetings and describes it as very positive because they are on time, they do not have to get up very early to take an early flight and it is cheaper for their company. One respondent explains that they have not yet discussed reducing air traveling at the workplace with anyone who can influence the matter but they will say no if asked to fly. *“If it comes up at work that I should fly, then I will say that no, I simply will not. [...] I will not come up with the excuse that yes but it is within the job and think it's great to fly. [...] And say I don't want to work at a workplace where I have to fly” (Inge).* One respondent have brought up the topic in school. When the class were going on an exchange week to France the student asked if the they could go by train.

In these answers the respondents bring up spillover effects on other pro-environmental behavior changes. According to Stoknes, to be part of a pro-environmental network also influences one's behavior in other areas and that is confirmed by the interviewees, who have all felt that the initiatives have supported them in their environmentally friendly behavior. When behavior changes, attitude often change, as Stoknes also argue. In this case when several of the respondents change behavior to fly less, their attitudes towards other behaviors is affected. The feeling of being able to change one's life, seems to be a new and engaging realization to some. Perhaps that has to do with that changing to pro-environmental behavior, reduces the feeling of hopelessness and cognitive dissonance and brings a feeling of power to do something good. For some, these private actions also spill over to becoming something collective that can have political influence. That relates to Stoknes, who means that pro-environmental change on individual or small group level, can build bottom up support or demand for changes on other levels. Interviewees mention trying to influence their workplace, colleagues and school, for example.

The results and analysis here have tried to answer the two research questions and have brought insights about the process of reducing or quitting air traveling and what Vi håller oss på jorden and Tågsemester has meant for this change. Next the study will be discussed.

DISCUSSION OF RESULTS

As mentioned, the sample of interviewees is meant to represent people who have formed an intention to change behavior and reduce or quit traveling by air. The results of the study show that people often lack a basic understanding of environmental consequences of flying and do not understand the extent of environmental impacts from flying compared to other behaviors. The study shows that when understanding is increased, it tends to affect values that people hold and create a need to act. This can begin the formation of an intention to change behavior. That is in line with the research on reducing air traveling showing that internalized knowledge of the negative environmental consequences of flying, can contribute to reduced flying. This also relates to the first stage in the Self-determination model; a sense of moral obligation to act, helps to form an intention to change behavior. Awareness of negative consequences of the present behavior is also likely to activate personal norms (Klöckner, 2016). This also relates to the Norm Activation Model, in that personal norms are experienced as feelings of moral obligation and they predict behavior. They are influenced by a sense of responsibility of doing a certain behavior and knowing that one's behavior has certain effects (Onwezen, Antonides & Bartels, 2013). In the previous research section, around thirty personal and social factors influencing pro-environmental behavior change were mentioned (Gifford, Nilsson, 2014), and some of them are related to the results. Knowledge and to feel responsibility are two of these.

Awareness can, according to data collected here, be increased by for example environmental/carbon calculators, TV programs, well known public figures or initiatives like *Vi håller oss på jorden*. Environmental/carbon calculators can help people to know if they are on the right path of living sustainably or not, in line with Stoknes' thoughts on signals and feedback.

For the interviewees, increased understanding was helpful in forming an intention to change behavior. That might not translate to other groups of people or not to the same extent. There might be more aspects why more information affected the interviewees. Stoknes means that we care less now, when we have more information than ever about the effect of climate change. But the reason why the respondents were affected by information might also have to do with how it was communicated. Information in environmental footprint calculators can be said to in line with Stoknes' framework; personal, simple and interactive. From that perspective the above findings is consistent with Stoknes' framework.

The results also shows that the change process often started with someone acting as role model, often a person in one's close network. Our social networks are important in this behavior change. We compare with and imitate each other to understand and create social norms of how we should be, to belong to social networks, as explained by for example Stoknes. Comparison happens more likely when people are close, like in a neighborhood or workplace (Gifford, 2011). The thesis shows that people who are friends, children, colleagues, parents or neighbors have compared with or imitated each other, to then change behavior. People in one's close social network that act as role models, appear in the study, to be

successful in helping others to change behavior. Reasons for this is that they make the change appear easier, since one can learn from experiences and that they are well known and therefore feel trustworthy. Therefore they are the best messengers of changing behavior to others in that group, according to Social identity approach (Fielding, Hornsey, 2016) and Stoknes. Practice theory also suggests that role models are important in forming our behavior or practice.

The above findings can seem to contradict that many interviewees said that social support was not necessary for their change (even if it was appreciated). This might be explained by research suggesting that people are often not aware of the extent of how much they are affected by social networks. One's decisions about behavior, is influenced by social norms and they affect us fast, intuitive and not deliberately planned, so that we are often not aware of them or of how much they influence us (Farrow, Grolleau, Ibanez, 2017).

The study shows that to travel by air and travel to the destinations one can more easily go to by air, is a strong social norm. Breaking this norm, is often controversial and unusual and has therefore been a mostly lonely experience for those that have done so. Stepping outside of the social norm and questioning air traveling, is often sensitive, according to the study. The wish to belong to our social network is also apparent when it comes to social barriers to reduce air traveling. The main barrier is according to the results here to not be able to visit close ones living abroad as much or at all. The strong social norm to travel by air might also explain why even generally very pro-environmental people have continued to fly, despite having had some awareness of the negative environmental consequences.

The interviewees in this study acted for a larger common good when changing behavior to reduce/quit flying, even if that was against their personal interests. That is consistent with Stoknes' thinking, but contrary to for example the Theory of Planned behavior or Norm Activation theory, where people are thought to primarily act according to their own interests.

As described above, there are around thirty factors influencing pro-environmental behavior change of which several connects to the results of this thesis. One factor brought up here is that to be close to problematic environmental places, can contribute to a will to change (Gifford, Nilsson, 2014), exemplified here by the droughts and fires in Sweden in the summer of 2018. A factor mentioned is that pro-environmental behavior can also be carried out because of non-environmental reasons (Gifford, Nilsson, 2014), here economic reasons. Yet another factor is that people's world view affect their behavior (Gifford, Nilsson, 2014). When part of the worldview of the interviewees changed, with increased knowledge, they changed their behavior. Related to these factors are self-efficacy, our thoughts on our ability to contribute to change, which is brought up in the mentioned Social-cognitive theory. Those with high levels of self-efficacy will behave more pro-environmental (Sawitri, Hadiyantob, Hadic, 2014). Interviewees describe that they and the others in the initiatives can make a

difference. And as part of the initiatives they can have a political influence, and for some that is a new experience. Several of these factors are also mentioned by Stoknes.

This thesis has tried to answer the first research question *How do people experience the process of change from being aware of and worried about the climate crisis, to reduce or quit their air traveling?* The results answering this question show that the change process to reduce or quit flying, has often started with increased understanding of the environmental consequences of one's flying and or people in one's own social network acting as messengers or role models. It showed that to break the strong social norm of traveling by air, can be controversial, so support from one's network is very appreciated. This mostly is in line with the theoretical framework by Stoknes, as well as other previously mentioned theory.

Tågsemester and Vi håller oss på jorden is very appreciated for being a support and inspiration in this transition. They create a community of like-minded people when other support is lacking. Communities like these initiatives can support people to form an intention of changing behavior. That is especially the case for those who have more recently become engaged in the flying issue. For people who have already changed behavior, the initiatives have a more reinforcing function, the study shows. Another insight is that it can have an encouraging effect on people to see that there are many, especially people one knows, who care about and act for the climate. This visible social action makes the issue of climate feel urgent and personal according to Stoknes. Being part of pro-environmental networks or behaving pro-environmental, can contribute to wider engagement according to both Stoknes and the results. The private decision to quit or reduce flying can, for example through Vi håller oss på jorden or Tågsemester also spill over to becoming something larger and collective, with possible political influence. That connects to Stoknes' thought on beginning societal change with change on individual and network-level. Stoknes' thought that when behavior changes, so does often attitudes, is also confirmed by the study.

Many theories focus on individual behavior change, but other theories propose that it is more a social process. In Social identity theory our identity is seen as being both individual and collective (the groups we belong to). According to this theory it is important to create a sense of common environmental identity, which can then be spread to other group situations (Fielding, Hornsey, 2016). That is what has happened in the studied initiatives.

The study shows that to share personal concrete stories conveying inspiration and experiences of how to stop traveling by air or traveling more by train, as done in Tågsemester and Vi håller oss på jorden, is very appreciated and supportive. It helps create a common vision of where people want to go, it shows stories about humans instead of abstract climate facts, it makes the change appear easier, it shows opportunities rather than losses, it shows people who act for the climate. This framing of communication relates to Stoknes' framework and to Nudging where framing is also important. Giving a pledge to behave in a certain way, as in Flygfritt 2019, is another method of encouraging behavior

change. This kind of promises can also be very appreciated and supportive, since it makes the decision clear and defined and because one is part of a community doing the same change. That relates to Social Identity theory.

Stoknes mentions several general barriers to pro-environmental behavior change and in this study two of these comes up; denial of the environmental problems with aviation, and cognitive dissonance, when people understand the problems but still fly.

This thesis has tried to answer the second research question *What have Tågsemester and Vi håller oss på jorden meant for this transition?* The results answering this question show that the initiatives are very appreciated as a community of support for people in this process, which is otherwise often gone through alone. The personal stories in the initiatives were regarded very much as inspiration and giving concrete tips. For some the initiatives have helped to form an intention and for others they have reinforced the decision not to fly. To know that there are many acting for the issue can be important. The pledge not to fly for a year was very appreciated. The findings of the study is mainly consistent with the theories mentioned in the previous research and Stoknes' framework .

Discussion on methods

The choice to carry out this study as a case study of the process of behavior change and the role of the initiatives, focused on the process, which suited the aim and research questions of the study. To base the study on qualitative semi-structured interviews, served the purpose of gaining insights into people's thoughts and feelings of this change process. When the interviewees were allowed freedom to tell their stories in their own way, and sometimes were asked to follow up questions, they brought up aspects and thoughts that might not have been collected with a standardized survey. To have a larger sample of interviewees would have increased the reliability of the study, but would have been difficult considering the limited time. An alternative could have been to combine these semi-structured interviews with a quantitative survey with a larger sample. That would have been beneficial, since it would have given more statistical insights into the process, but that was not the purpose of the study and would have been difficult within the given time constraints.

In hindsight it might have been better to ask the people who offered to be interviewed, to answer some basic demographic questions. This would have allowed the selection among them to be as representative as possible of people in this transition. Worth noticing is that the interviewees are people who have formed an intention to change behavior and they therefor tend to be more positive to train travel and to reducing air traveling than other groups of people would have been.

The use of Stoknes' thoughts as a framework proved useful to clarify and better understand the results. The field of the previous research of pro-environmental behavior change is vast and it would have been

an advantage if the previous research section would have been less general and more narrowed down to more specifically study the most relevant theories deeper.

Implications for behavior change interventions and communication

The main implications from this study for improving communication strategies when encouraging behavior change generally or reducing air traveling in particular are as follows:

An understanding of environmental consequences of flying and the extent of environmental impacts from different behaviors in relation to each other has to be communicated to people. Environmental footprint calculators can be useful in conveying this in a simple and clear form as well as TV, radio, films, well known people or Initiatives like Vi håller oss på jorden.

Important is also to have people in one's close social network like one's partner, children, colleagues, friends or people in initiatives like Vi håller oss på Jorden or Tågsemester to act as role models. This can be useful both in showing how one practically can go about decreasing/quitting traveling by air and increasing train traveling and in being an inspiration. People belonging to a group, are the best to convey messages to others in that group. So encouraging people who are already engaged to use their social networks to encourage change, would be useful.

Communities of people in the same process can be very appreciated and supportive in the process of reducing and quitting traveling by air, since this can be a controversial and lonely process. They can help form an intention to act and to reinforce behavior change.

To bring up the topic of reducing or quitting traveling by air can be sensitive, since one then steps outside the social norm. It appears to be successful to ask open questions in a non-judgemental way, for example How do you feel about flying?

It is important to help people understand that they can actually contribute to change. To start acting according to ones understanding can bring relief from bad conscious and that can be a motivator for change.

Simple and limited pledges to do or not do something can make change appear easier. To get inspiration that is personal preferably and to get concrete tips from people's experiences can be supportive. To look at changing behavior as a personal challenge of reaching for goals or as many small steps can be helpful. To be close to environmental problems can contribute to change, so communication should aim at making the problems appear close. Show that many others, especially people one knows, cares about and act for the climate when reducing/quitting traveling by air. People have the capacity to act for a common good, so do not be afraid in communication to bring up doing

something for this reason. Encourage people to be engaged and or part of a pro-environmental network, like Vi håller oss på jorden or Tågsemester, because that tend to increase pro-environmental behavior.

There can be different reasons for the intention to reduce or stop flying, they do not have to be environmental. People have different support in their social network and different need for support. People's decrease in air traveling looks different and have been present for different amounts of time. Therefore communication about reducing air traveling should aim to target different groups of people in different ways. Once a behavior has changed, it is important that it is reinforced so that it does not change back to the old behavior.

Communication on reduction of air traveling, can convey that staying on the ground leaves room for similar experiences to flying. Arguments for flying shown in the results, could be used when communicating about or promoting the alternative of train traveling, in line with Stoknes' thoughts on framing messages with a focus on opportunities rather than losses. Examples of arguments for flying that could be used for train traveling are: one could travel on vacation by train because one wants to treat oneself with a trip, get a change of location, relax, experience adventure, see beautiful nature as well as personally meeting many people with different backgrounds helping one to increase one's understanding of the world. Arguments for train traveling according to the study, are that there are many places that one can visit closer to home, in Sweden or Europe. Another advantage is the possibility to make several stops during the journey, enabling you to see more, making the journey part of the vacation. Traveling by train lets you meet many people which can be an experience in itself. The traveling experiences can also be less stressful than traveling by air and enabling time for working or reading for example, according to the interviewees. Train traveling does not have to mean less experiences, just different.

Contribution and future research

This study is different to most other studies that have been found in the research, because it focuses on people forming an intention or beginning to change behavior, to reduce or quit air travel. It also mainly focuses on social aspects of this change, rather than practical societal issues. The study is different also because it looks at what Tågsemester and Vi håller oss på jorden has meant for this transition, which has not been done, as far as the research for this thesis has shown.

A suggestion for future research could be to study more in-depth how communication could be targeted to different groups of people, when designing behavior change interventions.

CONCLUSION

When the interviewees had some awareness of negative environmental consequences of flying, it led to cognitive dissonance, when it came in conflict with the will to continue to fly. A way around the awareness was to motivate continued flying with various arguments. But when understanding of that one's flying is a major share of one's individual carbon footprint, a need to act was felt by many as a moral obligation to change behavior and reduce flying. That was experienced as a relief for many. Mentioned to have increased the understanding was carbon footprint calculators, media, public front figures or the Vi håller oss på jorden initiative.

Another important factor in this behavior change, is having social support. The interviewees were mostly alone in this change. For those with a partner, their support or acceptance was important, since vacations are often done together. Interviewees also describe support that they have received from or given to close one's like children, colleagues, neighbors, friends, relatives, people they met and so on, that have acted as role models. They have shown that it is possible to stop flying, take the train and still enjoy their travels. To bring up the topic of flying and climate is often hard, since it is sensitive for most. But doing it with open non-judgemental questions appears to be a way forward. The social barriers to reduce/stop flying are to not be able to see close friends and relatives as much, which connects to our wish to belong to our group or network.

The decision to quit or reduce air traveling means losses of opportunities and most felt some sadness for this, but it did not bother them to a large extent. Instead most were relieved since they did not have to keep feeling bad about the environmental consequences of their behavior. Rather ~~Instead~~ they felt happy for all the opportunities of train traveling. This relates to Stoknes' thinking on seeing opportunities rather than losses.

The social networks Vi håller oss på jorden and Tågsemester is very appreciated by all the interviewees for helping form their intention and or reinforce their decision to reduce/quit flying and travel more by train. The respondents were not alone or almost alone anymore, but could identify with a group of like-minded. This connects to Stoknes' thoughts on importance of visible social action and us as social beings needing others to belong to. The personal stories of experience that are shared in Vi håller oss på jorden and Tågsemester are part of why the initiatives were so appreciated. The stories gave inspiration, showed opportunities and made the choice to travel by train or not by air, seem more doable. This relates to Stoknes' thoughts on the power of stories that one can relate to and see opportunities through, that describes a common vision, and make the transition appear simpler. The promise not to fly also makes the decision simpler.

The pro-environmental engagement in general, including changing behavior to reduce/quit flying and increase train traveling, have a tendency to spill over to engagement on other areas of one's life. That can mean making other behavior changes to one's lifestyle or seeing the larger possible impacts of

one's changes together with others or wanting to influence traveling at school or work. That relates to Stoknes' thought that attitudes often follow behavior rather than the opposite and that to be part of a pro-environmental network often predicts other pro-environmental behavior.

The aim of the thesis was to investigate how people change behavior from being worried about the climate crisis, to consider reducing air traveling and what the initiatives Tågsemester and Vi håller oss på jorden have meant for this transition. The study has tried to do this investigation by answering the two research questions *How does the change process look like for people who change behavior from being aware of and worried about climate change, to reduce their flight travel?* And *What Tågsemester and Vi håller oss på jorden meant for this transition?* Stoknes' framework was used to help answer these questions. The thoughts and feelings of the interviewees have helped answering the questions by gaining insights into their experiences. These experiences have then been related to the theoretical framework and to the previous research. This has given insights that can be relevant to behavior change intervention communication strategies, aiming for a transformation to sustainable lifestyles generally and reducing air traveling in particular.

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Sources for recruiting interviewees:

Tågsemester (<https://www.facebook.com/groups/tagsemester/>)

Vi håller oss på jorden (<https://www.facebook.com/vihallerospajorden/>)

Appendix 1: About the interviewees

<u>Pseudonym</u>	<u>Age</u>	<u>Occupation</u>	<u>Member of Tågsemester/ Vi håller oss på jorden</u>	<u>Change in air traveling, compared to a few years ago</u>	<u>Change in train travel, compared to a few years ago</u>
Kim	64	Retired police	Tågsemester	Quit	More
Charlie	27	Business consultant	Vi håller oss på jorden	Less	More
Ellis	42	Pharmacist	Vi håller oss på jorden	Not in 2019	More
Robin	45	Analyst	Tågsemester	Less	The same
Vide	24	Social worker	Vi håller oss på jorden	Not in 2019	The same
Mika	30	Purchaser	Tågsemester	Less	More
Tove	36	Manager	Tågsemester	Less	More
Tony	19	Student and work in sales	Tågsemester	The same	The same
Kirsten	65	Social worker	Vi håller oss på jorden	Quit	More
Kaj	54	Preschool teacher	Tågsemester	The same	More
Inge	44	Computer engineer	Vi håller oss på jorden	Quit	More
Billie	38	Parental leave, programmer	Vi håller oss på jorden	Not in 2019	More
Alex	56	Unemployed	Tågsemester	Less	More
Lin	40	Engineer	Tågsemester	Less	More
Torild	19	Student	Vi håller oss på jorden	Not in 2019	More

Three of the interviewees have quit flying (or cannot see themselves flying for long). 6 promised not to fly in 2019, but one left the promise and will come back in 2020. 5 respondents travel less than a few years ago. Three interviewees travel by air the same amount as a few years ago, despite their intention to fly less. Reasons for this was: during the last years they have been living at home and traveling with the family, or been flying more during last years but recently quit. The amount of air traveling previously varies, some has traveled extensively and some very little. Twelve of the respondents travel more by train, while three travel with train as much as before.

Appendix 2: Interview guide

Background questions

- How old are you?
- What is your occupation: working / studying / else?
- If you compare with a few years ago, are you flying more or less now?
- If you compare with a few years ago, do you travel more or less train now?

Needs fulfilled by flying

- Why have you been traveling on holiday by air? What needs did these travels fill?

Forming an intention to change behavior

- Can you tell me your story of going from being aware of and worried about the climate crisis, to forming an intention of changing behavior to reduce flying or actually have changed this behavior?
How was your intention to change formed?
- Did Tågsemester or Vi håller oss på jorden help you form this intention, if so, how?
- Have you felt a moral obligation to act?

Social norms and networks

- What importance has it had for you, what others around you say or do?

The initiatives

- What is your experience of Tågsemester or Vi håller oss på jorden?
- How does it affect you and your traveling when you see that the groups are very active?

Personal stories

- In the Tågsemester group there are many concrete stories about people's travels to different places and maybe you have also posted stories yourself. Can you reflect on these and how these may have affected you?
- In Vi håller oss på jorden gruppen there are many stories about people who do not fly and maybe you also have posted something there. Can you reflect on these and how these may have affected you?

Promise (only for those who have joined Flygfritt 2019)

- How does it feel to make a promise of not to fly for one year?

Effects outside the initiatives

- Are you trying to influence others in your networks to fly less? And if you do, how is that? If not, why?
- Have your intention to fly less/quit flying (or Tågsemester or Vi håller oss på jorden) affected you

in other areas, than traveling?

Signals

- Does it matter to you to know how many members the group has and if so how?

Consistent behavior

- What one thinks sometimes not match one's behavior, for example one might want to live environmentally friendly but still fly. Is that something that you recognize? Please explain!

Non-structural barriers

- What do you think is hard emotionally or socially with this behavior change?
- Do you think that you will promise not to fly next year; 2020?

Appendix 3: Coding structure

Group of themes	Themes	Descriptions of themes	Examples of quotes
The process of reducing air traveling	Increased understanding	Increased awareness of environmental consequences of one's flying and what happens when it increases, how that can be achieved and how they have previously motivated their flying	"It is increased knowledge about what a big difference it makes (that justifies the respondent). I have been on pages where you fill in how much carbon dioxide emissions you cause. [...] Then it is so obvious that air travel is outstanding, that has a major effect. It is also the part that is perhaps the easiest to change. I am already a vegetarian and buy organic etc." Robin
	The close social network	Support and response from the close social network Affect one's social network: how it is to try to influence others by being role models or bringing up the topic	"It was me and my wife who made a joint decision and I needed no support in it. It was a natural step for us to take." Kirsten "It was quite important that my partner also thinks this is interesting. They have been a little more aware than me before and didn't want to fly so much. But then there are many friends around who do not take a stand in the same way as we do. And that makes it more difficult, but it is not crucial." Charlie "I have said more that I do this and then everyone else takes responsibility for their carbon dioxide emissions. I do not like pictures of air travels, so I try instead to like train travels much more (on Facebook). I don't talk much about others and their choices." Mika
	Deciding to reduce or quit flying	Feelings about quitting/reducing air traveling	"It does not feel like a sacrifice, but good to do something for the climate quite simply. It outweighs all negative aspects" (Billie). "It is frustrating" (Alex)

The importance of Tågseminster and Vi håller oss på	Social barriers to change	People in the close network as the main barriers to quit/reduce flying	“Diffickult socialt, jag skulle inte riktigt säga. Men jag väljer inte att ta upp den diskussionen med vissa människor. Det är så. Och det finns middagshinastudier där jag inte lyfter frågan. För då kommer det att bli dåligt humör vid bordet. Så det måste vara. Jag tror mycket på att det finns en tid och ett ställe för de flesta diskussionerna.” Alex “Få år sedan blev en vän gift i Italien och då åkte vi ner tillsammans med de andra. Om det hade varit i år, hade jag bara försökt åka tåg. Det är verkligen bara min hustru (som kommer från ett land som är svårt att resa till med tåg) och hennes familj. Det är det som gör det svårt socialt. Det gör det omöjligt (att sluta flyga helt och hållet).” Billie
	The new behavior of traveling by train	Train traveling is described as positive for several reasons	“Vi har målet i vår familj att åka till Paris nästa år [...] Så vi tittar på alternativ för att stanna längs vägen. Och barnen är väldigt intresserade av detta. Det är inte som att de måste åka till Thailand. De verkar inte bry sig om det alls.” Lin. “Jag tycker om att resa med tåg. Det är en upplevelse i sig själv. När man flyger är det bara resmålet som räknas. Och inte en upplevelse under resan.” Kirsten
	Supporting initiatives	Supporting communities with others in the same situation and what that means	“Jag upplever det som väldigt positivt. Trevligt att dela sina erfarenheter, tips och idéer.” Mika “Det betyder att du som enskild inte känner dig ensam i ditt val att stanna på marken”. Kim
	Sharing inspiring stories	Inspiring stories of train traveling and people who reduce/quit flying and what that means	“Det känns väldigt positivt att få alla dessa idéer och idéer om saker som du kan göra. [...] Många beskriver väldigt positiva upplevelser av att resa med barn. Jag skakar lite på ryggen när man reser långa resor med barn, för de kanske blir trötta och tycker att det är svårt att sitta på tåget. Det är fint att människor faktiskt gör detta, att det fungerar så bra.” Robin

	Promising not to fly	Committing to not fly for a year and what that means	“I think I have made a promise that I intend to keep. [...] It feels pretty nice because I will not start looking at cheap trips, or if I would want some sun in the fall... It's like I shut that door. It helps one to make a decision. Even though I would get a great offer (a flight) that one would choose between, then the fact that I have joined this group (Aviation 2019) would be a factor that is weighed in to not take this trip. I see it a bit as a challenge maybe for myself to decide on something and then stick to it too.” Ellis
	Spill over to other pro-environmental behavior	Engagement that spill over to other areas and how that happens	“It has increased my knowledge a little. I feel encouraged not to buy a car. Thinking about cargo bike instead. Try to create a lifestyle where one does not have such a large climate footprint.” Charlie

Appendix 4: Adverts for interviewees

The text below shows the adverts for interviewees that was posted on the Facebook groups of Vi håller oss på jorden and Tågsemester in March 2019. The text is translated into English for this thesis.

Advert in the Facebook group of Tågsemester:

Hello everyone, I am looking for people to interview for my master's thesis in environmental science, are you interested? I want to investigate how one goes from being aware of climate change, to wanting to fly less or have started to fly less / travel more by train and what importance this group has for this. The interview takes about 30 minutes and can be done by phone. Please reply here and I will contact you, or email! :)

Sincerely, Ninja Tunbjer

Advert in the Facebook group of Vi håller oss på jorden:

Anyone who wants to be interviewed?

Hello everyone, I am looking for people to interview for my master's thesis in environmental science, are you interested? I want to investigate how one goes from being aware of climate change, to wanting to fly less or have started to fly less/travel more by train and what importance this group has for this. I'm looking for people who intend to fly less or fly less already.

The interview takes about 20 minutes and can be done by phone. I need to record the interview but you are anonymous except to me. Please reply here and I will contact you, or email!

Sincerely, Ninja Tunbjer

(email address of Ninja Tunbjer)