Framing for Change

Effects of Message Framing on Attitudes Towards Personal- and Societal Climate Change Mitigation Efforts

Bachelor's thesis
Author: Johannes Widlund
Supervisor: Rafael Ahlskog
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Uppsala University
Development studies
Abstract

This study has made use of an experimental method to investigate if and how exposure to an integrated 'socioeconomic- and climate justice' framing, and a 'catastrophe' framing, alter Swedish post highschool students attitudes towards climate change mitigation efforts, both on a personal- and societal level. The experiment was conducted through 287 surveys where equal shares of the respondents were given different stimuli through a short text at the beginning of the surveys. Results indicate that contrary to the hypotheses, exposure to the 'catastrophe' frame had a larger and more positive effect on especially attitudes towards personal climate change mitigation efforts, but also to some extent on societal efforts, than did exposure to a 'justice' framing. This is possibly due to the salience of catastrophe framings in the Swedish public discourse, and /or the integrated approach the educational system has taken on the subject of sustainable development.
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Introduction and background

“We are the first generation that can put an end to poverty and we are the last generation that can put an end to climate change”

–Ban Ki-moon

Climate change is often described as the global society's biggest challenge (BBC, 2015; Hansen, 2010; IPCC, 2015, p. 2; Sturmer, 2014). A number of things cause global warming to be particularly difficult to deal with. Our different perceptions of climate, the difficulty, for laymen at least, to differentiate between climate and weather and connected to that, the consequences of climate change versus normal weather fluctuations (Hulme, 2009, p. xxiv). The fact that everyone is both affecting and being affected by our climate, thus arguably creating the largest 'tragedy of the commons' humanity has ever faced (Moser & Dilling, 2007, p. 20). Then there's the fact that the responsibility for the current greenhouse gas levels in the atmosphere is very unequally distributed, where few have polluted much. The poorer countries, striving for a standard of living closer to that of the wealthy nations, will also have a harder time coping with the massive implications of a warmer world (Beck, 2008). Considering all of these and many more aspects, Gardiner (2011) dubbed climate change a 'perfect moral storm' in reference to a weather phenomenon where mutually reinforcing processes can create terrible winds and rainfall.

Philosophy professor Folke Tersman has tried to visualize the problematique through a hypothetical tale of one land plentiful of water, and one with a severe drought. Both countries have ten million inhabitants and the abundant citizens all have 10 litres of water they can pour in a pipe that will distribute it equally amongst the people in the drought stricken country. If everybody poured in their water, every thirsty citizen could get ten litres of water each, but if only one person contributed they would only get a millionth of a litre each. Or to put it in another way: if two million people poured in water, equivalent to two litres for each recipient, the individual that would be contributor number 2 000 001 would only add a millionth of a litre, amounting to 2,000001 litres to all. Every personal contribution is negligible, insignificant, but a collective failure to act would prove disastrous for the thirsty millions, and the collective effort is still only made up of these very small actions (Tersman, 2009a, p. 118). Therein lies the heart of the climate challenge, with the added twist that everyone is, in a sense, more or less thirsty, i.e. will be affected by global warming. The answer to the commonly asked “What difference does it make?”-question is therefore something like – almost no difference, but also, potentially, all the difference in the world. Arguably an extraordinarily troublesome foundation for collective action.
How does one amass the kind of virtually unanimous support needed for this global enterprise to be feasible? No future societal development can be envisioned excepting or disregarding the reality of climate change. It is a chronically diffuse constant affected by almost everyone and affecting all. But it has arguably become more than just an increasingly evident physical reality. Climate change has become an idea, a non-physical entity that carries different meanings and social relevance, making its way into almost all academic disciplines and aspects of life. Mike Hulme, a distinguished climate researcher, took a break from his role as Director of the Tyndall Centre where scientists, economists, engineers and social scientists strive towards sustainable answers to societal challenges, and wrote a book titled ‘Why We Disagree About Climate Change’ (2009). There he treats climate change not just as a geographer and a scientist would, as quantifiable and measurable data, but also as a notion, a concept (Hulme, 2009, p. 322).

As an extension of this thought he argues that it is a vain hope that science and technology alone will be able to solve the climate problem. He summarizes this notion in an article “It is wrong to suppose that predictive science can provide the basis for individual or collective action. It is not enough for people to know about climate change; they also need to care about it, and to be motivated and able to change behaviour. And care and motivation must come from something beyond science – from ethics, a sense of justice, a moral framework” (Hulme, 2007, p. 244). This is a position that he shares with Lorenzoni et.al. who argue that it is not enough to simply know about climate change. One needs to care, feel engaged and be motivated to take action (2007, p. 446).

Hulme proposes that we ask a slightly different question. Instead of the classical “how do we solve climate change?”, he advocates that we should phrase it “how does the idea of climate change alter the way we arrive at and achieve our personal aspirations and our collective social goals?” (Hulme, 2007, p. xxviii). This essay will, among other things, make an attempt at doing just that, integrating the climate debate in another human aspiration, or collective social goal if you will, namely global socioeconomic justice.

This essay is going to examine the effects of framing climate change in different ways. The frames that will be tested will focus on two specific aspects of global warming. The first one being the notion of catastrophe connected to planetary change. For example the esteemed climate scientist Jim Hansen has named one of his books “Storms of my Grandchildren: the Truth about the Coming Climate Catastrophe and Our Last Chance to Save Humanity” (Hansen, 2010). Even though many of Hansen's colleagues find this sort of rhetoric alarmist and perhaps exaggerated, there is certainly scientific consensus regarding the fact that global warming has enormous and dangerous implications for human kind (IPCC, 2015, p. 61). This framing is also a common way of
communicating climate change, not least in the media (Shanahan, 2007).

A second way of communicating the climate change problematique is to focus on another true perspective, namely that the effects of climate change will be unevenly shared. Some countries are less resilient and more prone to disaster: lowlands, coastal areas, islands, poorer and/or more densely populated nations etc. Moreover, there are huge differences in how much different nations have, and still do contribute to climate change. Therefore it might be argued that in the name of justice richer nations should contribute more to mitigation of these challenges (Martinez-Alier, 2015; Shanahan, 2007). The world is now in a situation where a minority's wealth is the main driver of greenhouse gas emissions, and a majority's poverty is the main source of climate change vulnerability (Parks & Roberts, 2008, p. 623f). Thus, it could be argued that climate change could be used as a tool to promote equity and a just world. Global warming can be an essential driver of a societal movement promoting equality, compassion and cooperation. This positive paradigm with a vision for a better world puts climate change as a contributor of this development, a force for human flourishing rather than the reason for mankind’s annihilation.

Several scholars have conducted research on this topic, for instance Shanahan (2007), giving the inspiration to the specific frames presented above. The justice frame used in that study was however more focused on, simply, richer countries' obligation to help poorer ones. One of the contributions of this paper will be to try to integrate climate change as a help, a tool, to achieve something more concrete and, hopefully, widely endorsed i.e. socioeconomic justice. That climate change needn't be a hindrance and a nuisance but part of a holistic take on improving the world.

The experiment will be conducted on Swedish university- and folk high school students. Sweden is a wealthy country and a Credit Suisse report from 2015 claimed that the Swedish households were the sixth richest in the world (Stierli, Shorrocks, B. Davies, Lluberas, & Koutsoukis, 2015, p. 10). Sustainability has an integral and important part in the educational system, and it is a nation which takes pride in being environmentally friendly and conscious (Regeringskansliet, 2015; Riksdagsförvaltningen, 2013). Students of today will be the politicians and workers of tomorrow and it is arguably so that this generation will be subject to both serious consequences of climate change, and thus naturally involuntarily assigned the primary responsibility of mitigating and adapting to this reality. Or as president Obama put it “We are the first generation to feel the impact of climate change and the last generation that can do something about it” (The White House, 2014). Therefore, to gain insight into how different climate messages are perceived among students is valuable. Since Sweden wishes to be a leader in the global community when it comes to mitigating dangerous anthropogenic climate change, and has taken steps to educate and implement
sustainability into the everyday thinking of students, it is important to recognize the kinds of messages that resonates with this group (Skolverket, 2016).

**Purpose**

The overarching aim of this essay is to investigate how to effectively communicate climate change and inspire environmental action. The purpose of this essay is therefore to investigate the effects of climate change framings on Swedish post high school students. More specifically, how does a 'catastrophe' and an 'integrated justice'-frame affect Swedish post high school students' attitudes towards climate mitigation efforts, both on a societal and a personal level?

**Hypotheses**

1. Exposure to an 'integrated justice' framing will be associated with an increased willingness to personally take responsibility for climate change mitigation than will exposure to a 'catastrophe' framing.

2. Exposure to an 'integrated justice' framing will be associated with stronger belief in a grassroots-movement as the main solution to climate change.

3. Exposure to an 'integrated justice' framing will be associated with an increased willingness to contribute to international climate change mitigation efforts than will exposure to a 'catastrophe' framing.

4. Exposure to a 'catastrophe'-framing will be associated with an increased willingness to attribute responsibility to external actors, such as politicians and corporations, for climate change mitigation.

5. Exposure to a 'catastrophe' framing will be associated with an increased willingness to climate proof one’s own geographical area than will exposure to an 'integrated justice' framing.
Methodology

Experiment

In order to know how frames affect people I have chosen to structure this essay around an experiment. Experiments are often associated with white lab coats and the natural sciences, or with psychological tests such as prisoner dilemmas or the like. However, experiments have gone through a bit of a renaissance in the social sciences as well (Teorell & Svensson, 2007, p. 74). There are a number of positive things with experiments from a researchers perspective. One is the essential cornerstone of randomization in this method, which makes it possible to draw firm causal conclusions based on observed differences. In this case that meant that the surveys were all put in a single pile with one catastrophe, one justice and one neutral survey after one another. Then they were handed out, and there is no reason to believe that people would systematically place themselves in a way where these different framings would coincide with a particular age group or any other variable that could potentially make the results skewed. Especially since no one was told that they were actually participating in an experiment. Thus, the randomization process works as a verification of the validity of the results, although the randomization naturally could turn out to distort the results by chance as well, especially in studies with few participants (Teorell & Svensson, 2007, p. 74ff).

There are different ways of conducting experiments. In the classic science experiments people often come to researcher instead of the other way around. That takes away another variable that could potentially affect the results of the experiment, namely location and surroundings, (given that the setting doesn't affect different people in very different ways). So it is in some ways an even more controlled and 'sterilised' environment (Esaiasson, et. al., 2012, p. 93f). However, when faced with an obvious experiment situation, the experiment itself can cause people to change their behaviour. What you gain in control you lose in realism (Esaiasson et al., 2012, p. 94; Teorell & Svensson, 2007, p. 75). In a field experiment performed out in the respondents own environment, it is still desirable to achieve a high degree of similarity in the environment (Patel & Davidsson, 2007, p. 56). In this regard, as will become clearer further down in the text, my experiment fell short of perfection, since people were for instance both in- and outside, on a lecture and on their lunchbreaks.

There are instances where experiments could be ethically problematic. Classic studies like the Stanford Prison experiment, when people randomly were ascribed roles as either prisoners or prison guards for instance (Zimbardo, 1973). In this experiment however, the stimulus is arguably quite harmless, not least because all information is truthful, meaning that no one is manipulated in the
sense that they're being lied to. I will explicate upon on the issue of the two frames further down.

So since the randomization process gives good grounds to believe that there have been no systematic tendencies or biases among the respondents, and since there is a control group with a neutral framing, it is reasonable to conclude that the presumptive differences in answers are in fact down to the stimulus provided. In other words, it is possible to isolate the cause, the explanation, of the differences. Isolation is one of four main causal criteria scholars wish to satisfy for a proposed explanation. Another one is to control for the direction of the causation. The classic mantra: 'correlation does not equal causation' is, however, one more problem that is easily resolved by the experimental method. Again, as long as there are no reasonable doubts as to whether there could be a systematic difference between the different groups, correlation is almost certain to be causation (Teorell & Svensson, 2007, p. 77). And since there's a control group a third criteria can be met, namely counterfactual inference. If X wouldn't exist, there would be no Y, or at least, less of X equals less of Y (Teorell & Svensson, 2007, p. 64).

Where experiments fall short in general is in determining the actual mechanism. In this case, why and how do the framings produce results? For that kind of explanations one needs other methods (Teorell & Svensson, 2007, p. 77). I have used other scholars' research to find theories that could explain the results from my essay, not drawing on the experiment itself for ideas regarding the actual mechanism.

A few business leaders in collaboration with sociologist Elton Mayo in Hawthorne set out to see if better lighting in a factory would increase productivity and workplace well-being. After increasing the light, so did productivity, so they increased it even more getting the same result. It worked a third time as well. Finding this odd they removed a few lights again and found that productivity increased yet again. The conclusion they drew after talking with the employees was that the act itself, that they cared about the workers' situation, was the real mechanism driving the increased performance, called 'the Hawthorne effect' (Mayo, 1933; The Economist, 2008). More than an example of how the experiment itself did not produce the knowledge of the mechanism, this serves to highlight a good thing about having more than one stimulus. Having two different framings ensure that it's not simply more information that creates the effect, but the content of it.

The process

I had the choice to work with smaller groups and present the different framings orally, and thereafter through a survey mapping the reactions through a series of questions. I chose not to use this opportunity for a couple of different reasons. It is less time effective, I therefore would have
had to either settle with little data, or devote an unproportionately large chunk of time to find enough settings to get a satisfactory amount of answers. Another risk with oral presentations is that I as a presenter/researcher play too big a part in the stimulus, and that my preferences are subconsciously communicated, commonly called the 'observer-expectancy effect' (Esaiasson et al., 2012, p. 25; Rosenthal & Rubin, 1978, p. 377).

The choice instead fell on surveys, where parts of the information was angled, or framed, in two different ways, with a neutral one as a control group. First there was a general information, basically stating that climate change is a topic that's increasingly in question, as exemplified by the climate meeting in Paris, COP21. For a full example of a survey I will attach one as an appendix in the end of the essay. This first general information was shared by both the 'justice', 'catastrophe' and the 'control'-survey.

Firstly, an internet survey was made with the three different framings, and a script that ensured a random allocation of the surveys. Performing a pilot study such as this helped in ensuring that questions and statements were formulated in a way that people understood and could relate to and that the general idea was feasible and worth pursuing. It also served as a first step in exploring and envisioning possible scenarios and outcomes. After collecting close to 50 answers per framing, the results were analyzed and a number of changes were made. Some after general contemplation, and others after comments from the participants. General things that people found difficult to understand, such as statements phrased in this way “I think that politicians have a responsibility for mitigating climate change” were changed to questions “How much responsibility do you think politicians have...” (see appendix A). This in order to make the participants grade the different actors. In the first formulation it could be taken to be a yes or no question, and I was searching for a more nuanced picture. Other notable alterations were changing a couple of statements put as negations in the pilot study to positive statements. The reasons for negating them in the first place was to keep people from routinely filling in a specific answer, but this proved overly confusing and risked distorting the results more than its alternative.

Many people also wanted an “I don't know”-option, or something of that sort, which in a few cases were granted, even if it in most cases were left as it was in order to make people choose, even if there was some insecurity. The main purpose of the essay is still to investigate the difference framing makes, not people's specific opinions, why answers are valuable even if the respondents are a hundred percent confident in their choice. Many other details, such as emphasizing what the future responsibility is of different actors, rather than who is to blame for the situation that we're in now, and adding 'folkhögskola' (folk high school) to the different levels of education. After this, the
revised internet forms were put back online and the three hundred paper surveys were printed. The number three hundred came from calculations suggesting that at that level statistical significance could be achieved for a number of variables.

**Justice frame**

The justice-survey had a text focusing on the fairness aspects of climate change, highlighting the possible synergy effects of working with socioeconomic justice and climate change as interconnected concepts. In order to keep this text short enough so that it would be fitting for a survey, there was little space to elaborate and explain this thought. There might be a possibility that some respondents didn't understand this vision of mine, and perhaps the complexity of the idea would be more suitably presented in a longer text or in an oral presentation. The basic notion of climate justice has probably been communicated clearly, albeit the full extent of my integrated approach might have been less clearly understood. Ideally, to further improve the validity of the essay, some sort of control mechanism to ensure that the message came across would have to be added. I struggled to find a good way to handle that particular problematique in the design of this thesis, mostly relying on comments and feedback from the first pilot study.

**Catastrophe frame**

In the catastrophe frame the message was easier to communicate. I simply emphasized the long-term consequences of treating this question with a business as usual-approach. Rising sea-levels, disturbed eco-systems, with human migration and suffering as a consequence. Ultimately resulting in a situation where human existence as we know might be under threat. These general ideas would probably considered uncontroversial in the academic world, with the possible exception of humanity's possible extinction, but I still qualified my statements with phrasing such as “many scientists believe” instead of just “scientists believe”, and that climate change “could” result in these events occurring, rather than expressing doubtless confident knowledge. This more academic way of presenting things is perhaps not as powerful as if it would have been written by the evening press by a dramatic journalist, but I tried to balance a strong enough stimulus with academic integrity and scientific honesty. Writing as if the scientific predictions were proven beyond any reasonable doubt could also have made respondents with an interest in these issues skeptical of the survey, thereby not answering reliably to the questions.

**Execution and selection**

The aim of all research is to say something meaningful about the world. In order to make this study meaningful I wanted to try to find a selection that could be representative of a bigger population
Post high school students is a relevant and important population for this kind of research, as outlined in the introduction. Reaching a near perfect reflection of this population was beyond a bachelor thesis, but I have aimed to come as close as possible. Firstly I identified a number of courses that would encompass a broad representation of social science students and sent emails to the teachers or coordinators of those courses. One was a lecture on a political science course, and one on a political economy course, which also included people majoring in education. I also emailed teachers in big courses in different engineering programs and courses taken by medical students, both of these groups were very hard to reach. I also emailed teachers in social psychology and psychology courses and got one response. Unfortunately, the class that I was supposed to visit was moved without my knowledge, and I solved that by basically 'crashing' or turning up unannounced just before a lecture for nurses and asking for permission to hand out my survey, which was approved. I tried to fill the void of engineers, natural science-students and psychology-students by handing out surveys on students' breaks on University campuses where the 'missing students' generally studied. I also had the opportunity to visit a folk high school, with everything from social science- to music students and hand out my surveys there. A summary of the variety of the respondents can be found in the analysis and empirics-part.

One practical thing of importance is that the respondents actually get the stimulus before they see the questions. Otherwise the power and significance of the text can be reduced. For example, if a respondent would see questions regarding their own willingness to change their diet or sacrifice owning a car, that could be a message that would resonate more with the person emotionally than the stimulus and therefore cloud or overrule the effect of the stimulus (Esaiasson et al., 2012, p. 327f). This mechanism would also hold true for things such as conversations with other people during the filling out of the survey. I tried to counter these things by urging the participants to stay silent during the experiment, as well as placing the stimulus on a separate page, meaning that they would have had to turn the page to see the questions. In regards to talking during the experiment it is naturally difficult to ensure and enforce it, especially since it was a voluntary task. Some people were quick to finish and thereafter began to talk with another, which could be considered harmless, and some were sitting and talking without participating in filling out the survey. All those things were more or less out of my control, but my impression was that there were very little conversations that seemed disruptive or that would in any substantially harmful way affect the results.

The issue of non-response is also important to address, even though it does not threaten the internal validity of the experiment thanks to randomization, and is therefore not as big of a concern as in other survey research, this will be addressed in more detail further down. Since these surveys have
been voluntary, not every person in every setting has complied to filling it out. In some settings, such as when I visited the political science lecture (about methods), very few people chose to leave without filling it out, but when I visited a lecture about political economy, approximately half of the students did. A substantial amount, approximately a third, of the surveys were collected through randomly approaching students in- or outside of university buildings during breaks. When I tried it outdoors, most people, except those who were in a real hurry to a lecture, agreed to fill out the survey, whilst indoors people were more often on the way to a lecture or seminar and therefore did not participate as frequently as the people who were outside. There is a possibility that the one’s who had the opportunity, but chose not to participate, are people who do not find this topic interesting and who hasn't given it a lot of thought. There is a chance that this has affected my results slightly. Perhaps the ones who are not so interested would be more susceptible to the effects of different framings, or perhaps they would have altered the results on some questions, such as how worried they are about climate change.

In summary though, my general conception is that there have been no non-response that could be said to seriously distort the results. There were considerably more settings where the non-response was close to zero, than settings where it was large, so the people who are not particularly interested in the topic should also be reasonably well represented, at least considering the limited scope of this bachelor thesis. And the possibility that the non-response was more down to circumstances such as being in a hurry somewhere, rather than variables that would have affected the results. But, in the very nature of non-response is the impossibility of knowing how it has affected the results. Of the three hundred that were handed out, 287 were returned, which is another kind of non-response known as withdrawal or attrition. That equates to around four percent of the total surveys, according to Bjurwill, twenty percent is the threshold that mustn't be crossed, meaning that attrition bias shouldn't be major concern for this study (2001, p. 36).

**Reliability and validity**

More is said about reliability and validity in other paragraphs of the essay, but I will briefly mention two concerns here as well. As for the registration of data and possible existence of unsystematic errors, there could possibly be some grounds for reliability critique. The surveys were manually coded into an excel sheet by myself. I developed techniques for continually checking for errors and always placed my fingers the same way whilst typing in the numbers, thus trying to minimize human error. It is though, naturally, an area where perfection is not guaranteed, even if there arguably is little ground for severe concern.

Another possible area of concern is the notion that people merely answered what they would like to
live up to, rather than answers that more accurately corresponds with their real life behavior. This is a validity issue that will be developed in the analysis in connection to the catastrophe framing in particular (Teorell & Svensson, 2007, p. 57, p. 75).
Theory

Seriousness of climate change

That climate change is, to a large degree, man-made and poses a serious threat to humankind is not much of a debate among scientists, policy makers and scholars anymore. This is emphasized by the global endeavor at COP21 resulting in the 'Paris Agreement' where there's an explicit goal of limiting the temperature increase to 'well below two degrees Celsius' (Tollefson & Weiss, 2015). The specific implications of different temperature increases are still not settled within the scientific community, but there is clear consensus that a temperature increase of more than two degrees could prove disastrous, activating natural mechanisms, commonly called climate feedbacks or tipping points, that could accelerate the global warming process considerably (Hansen et al., 2013, p. 14).

One such mechanism is the release of methane gas from tundras in North America and Siberia, a highly potent greenhouse gas with 25 times the heat trapping potential of CO2; another is the melting of the polar ices (Yvon-Durocher et al., 2014). Since ice and snow is naturally a lot brighter than seawater, when these oceans are covered in ice, they reflect the sunlight to a greater degree, thereby not absorbing as much of the heat (Hansen, 2010, p. 42ff). Esteemed climate scientist James Hansen argues that even exceeding 1,5 degrees Celsius could prove disastrous. In his book with the alarming title *Storms of my grandchildren – the truth about the coming climate catastrophe and our last chance to save humanity*, Hansen often bemoans his own and his fellow climate scientists' lack of skills in communicating climate change (2010, p. 90). Hansen has been at the forefront of climate research and mitigation efforts since he brought climate change to the attention of the US Congress and indeed large portions of the world in 1988, and is candid in his assessment “Human-made climate change is, indeed, the greatest threat civilization faces” (Hansen, 2010, p. 70; Shabecoff, 1988).

This point is stressed by another highly important actor in the scientific community, namely the Intergovernmental Panel on Climate Change (IPCC). Albeit a bit more restrained in their assessment of the trajectory of the climate than Hansen, they still establish: “Climate change will amplify existing risks and create new risks for natural and human systems. Risks are unevenly distributed and are generally greater for disadvantaged people and communities in countries at all levels of development. Increasing magnitudes of warming increase the likelihood of severe, pervasive and irreversible impacts for people, species and ecosystems. Continued high emissions would lead to mostly negative impacts for biodiversity, ecosystem services and economic development and amplify risks for livelihoods and for food and human security.” (IPCC, 2015, p.
Continuing to mitigate climate change at the pace of 2014 would probably mean a global temperature increase of between 3.7-4.8 degrees Celsius according to the IPCC, which could imply enormous and potentially irreversible climatic alterations (IPCC, 2015, p. 37). What is dubbed 'Reasons for Concern' (RFC) are changes to the physical environment listed in three categories; physical systems (glaciers, ice sheets, floods, drought, coastal erosion, sea level effects, etc.), biological systems (terrestrial ecosystems, wildfire, marine ecosystems), human and managed systems (food production, livelihoods, health and/or economics). The reasons for concern are as can be clearly seen many and encompass virtually every physical prerequisite for human survival (IPCC, 2015, p. 14).

**Framing**

It might seem like an arbitrary point to stress, but all information, as Nisbet argues, is indeed framed (2009, p. 15). “Framing is an unavoidable reality of the communication process, especially as applied to public affairs and policy” (Ibid.). Frames could be explained as putting an issue in a particular context where it gains meaning and relevance. It often stipulates responsibility and agency and paints the suggested problematic in a relatable fashion. Therefore it could be argued that it is a process in which one’s goal is to guide a specific train of thought in the prospected audience, thereby making it more persuasive (Nisbet, 2009, p. 15f). “A frame links two concepts so that after exposure to this linkage the intended audience now accepts the concepts' connection.” (Ibid., p. 16). The bottom line is summarized in the subtitle of the same publication: “Why Frames Matter for Public Engagement”, or to paraphrase, how things are presented affects responses to the issue in question. One of the developers of framing theory is Robert Entman, who explains it as taking a specific aspect of perceived reality and then highlight that particular part. This increases the salience of a communicated message (Entman, 1993, p. 52). Framings are therefore always bound within a specific cultural context.

The very concept 'climate change' actually originated from a rhetoric advisor to George W. Bush. 'Global warming' had been shaped and conceptualized by environmentalists and adversaries of fossil fuel industries and large emitters, and had negative connotations and stipulated responsibility for polluters. Climate change however, could be made into a concept whereby no one was to blame. The climate is just changing (Lakoff, 2010, p. 71). In cognitive- and brain science, frames are unconscious structures. “All of our knowledge makes use of frames, and every word is defined through the frames it neurally activates. All thinking and talking involves 'framing’” (Lakoff, 2010, p. 71f). This also implies that a failure to pick the right words could trigger the wrong emotions,
values and meaning, making communication of something as complex and vast as climate change challenging (Lakoff, 2010, p. 72).

Framing for change

The International Institute for Environment and Development, IIED, published a paper titled *Talking about a revolution, climate change and the media* where Mike Shanahan reviews how the media in a number of different countries reports on, and what people think about, the climate problematique (2007, p. 1). There Shanahan writes that key conclusions to draw from the paper includes, and this connects with the previous point about the fact that frames matter, striving to make stories more relevant to audiences, and also that people and institutions responsible for channeling information to the general public must be careful and aware of the implications of certain framings (Ibid.). Shanahan identifies six common frames the media uses, “The 'scientific uncertainty' frame struck a chord with people who don't want to change, while the 'national security' frame might inspire action from the same individuals. The 'polar bear' frame appeals most to animal lovers, while the 'money' frame will chime with politicians and the private sector.” (2007, p. 2).

However, it is the final two, the 'catastrophe' frame and the 'justice and equity' frame that will be the focus of this experiment. According to Shanahan, a catastrophe, or alarmist, narrative will create feelings of helplessness. The vastness of the challenge humanity faces and the undeniable of one’s own relative powerlessness inspires inaction (Ibid.). Unless one has experienced a natural disaster that could clearly be attributed to global warming the lack of personal connection to the change in climate causes a discrepancy between a catastrophe frame and one’s everyday life (Moser & Dilling, 2007, p. 23)). However, a focus on justice and equity will create a sense of empowerment, that it is within one’s grasp to contribute to. Shanahan here quotes Saleemul Huq, Senior Fellow in the Climate Change Group at the International Institute for Environment and Development, “Most people in the climate change debate focus on how to cut emissions and how to bring the US, China and India into an agreement, (…) Impacts of climate change on poor countries, and the responsibilities of rich nations to help them, get much less attention” (Shanahan, 2007, p. 3).

Moser and Dilling, in their book with the clever title *Creating a Climate for Change*, summarizes the communication problematique “the inherent natural characteristics and deep societal roots of climate change stack the deck against the issue being recognized as an urgent and actionable problem” (Moser & Dilling, 2007, p. 20). The issue of climate change is inherently interdisciplinary, which can prove challenging if people aren't trained or used to connecting important puzzle pieces from different subjects. One of the main points of the book is the notion
that in order to be motivated for action, the very concept of communication must be examined and elaborated. Communication in support of social change must be a process of engagement, dialogue and exchange where feelings and mutual understanding can be shaped and unfolded. These issues must be processed, not merely absorbed (Moser & Dilling, 2007, p. 24). This point is shared by Sterman who proposes “interactive simulations that allow people to discover, for themselves, the dynamics of complex systems like the climate” (2011, p. 813). Furthermore, attitudes often take a long time to change, it is a slow evolutionary process, rather than an instant revolution (that, of course, also happens regularly, but it is relatively rare) (Heberlein, 2012, p. 584). However, some of these conclusions would arguably not apply to Swedish students who have, as previously stated, been working with sustainable development-issues throughout their school years, and show many signs of being well aware of climate change and its implications (Carlsson, et al., 2015; Novus & Fortum, 2013; Skolverket, 2016).

Other insights from the book include that localized information resonates more with people. Climate change is often perceived to be distant and not particularly urgent for people personally (Moser & Dilling, 2007, p. 63). Humans are inherently social beings, why a focus on social values could also stimulate change. Collective endeavours are more inspiring than individual motivations, and constructing a future worth fighting for is more favourable than helping people envision a disaster (Ibid., p. 85). Existing beliefs will be hard to tear down, and robust beliefs will serve to deconstruct an idea or frame that does not easily coexist with those beliefs (Ibid., 2007, p. 103). “For communication to be effective, i.e., to facilitate a desired social change, it must accomplish two things: sufficiently elevate and maintain the motivation to change a practice or policy and at the same time contribute to lowering the barriers to doing so” (Ibid., 2007, p. 510).

**Catastrophe**

“If a red light blinks on in a cockpit, should the pilot ignore it until it gets a peer review and speaks in an unexcited tone? (…) Is there any way to say it sweetly? Patiently? If one did, would anyone pay attention?” (Meadows, 1996).

It strikes me as I read articles and books about climate change that the notion of catastrophe is always close at hand. With the exception of nuclear war, nothing human induced poses such potentially disastrous impacts as climate change. However, many scholars are wary of the catastrophe frame (O’Neill & Nicholson-Cole, 2009, p. 360). Previously cited Mike Hulme took to the media to communicate his worries about an alarmist discourse “I believe climate change is real, must be faced and action taken. But the discourse of catastrophe is in danger of tipping society onto a negative, depressive and reactionary trajectory.” (Hulme, 2006). James S. Risbey, another
scientist, first makes a distinction between “alarmist hype and alarming prospects” (2008, p. 27), and then argues that not trying to communicate the dire emergency of climate change would be to fall in one’s civic duty. If things are as alarming as many studies suggest, it would be immoral and counterproductive not to say it (Risbey, 2008, p. 34f).

Moser and Dilling (2007, p. 81) argue that a fear inducing frames can increase the salience of an issue and serve as a wakeup call. However, even if fear could wake us up, it might not be enough to actually get us to go to work. Especially if a catastrophe-message is lacking specifics and is “perceived as manipulative, or if it comes from little-trusted sources, it may not even evoke fear but resentment, dismissal or no response at all (Moser & Dilling, 2007, p. 82). As previously mentioned, fear can emphasize one’s own vulnerability and therefore increase one’s personal sense of urgency to act. An effort to scare people into action is generally not “effective in motivating real long-term behaviour change, absent practical, doable alternative courses of action” (Moser & Dilling, 2007, p. 512). As mentioned previously, Shanahan has found that catastrophe inspires inaction (2007, p. 3).

O’neil and Nicholson-Cole summarize their article by stating that even if they do not propone a framing of fear, it can capture people's attention, and also induce a sense of importance. “Although shocking, catastrophic, and large-scale representations of the impacts of climate change may well act as an initial hook for people's attention and concern, they clearly do not motivate a sense of personal engagement with the issue and indeed may act to trigger barriers to engagement such as denial” (O’Neill & Nicholson-Cole, 2009, p. 376).

Gifford argues that the terror management theory could hold an answer to passivity in relation to fear inducing climate change messages. The salience of one’s own mortality in response to the climate threat can become a mechanism that serves to paralyze one’s proactivity in the mitigation quest (Gifford, 2011, p. 296; Vess & Arndt, 2008). Other scholars believe that the same theory could make oneself cling on to and protect everything that can help to evade death as well as bolster nationalism and patriotism (Pyszczynski, 2004, pp. 826, 840).

Justice

Much has been said of ’climate justice' as it is often framed, and there's been substantial change on a policy level as well. Robert Gampfer wrote an article in 2013, in the context of being in between the stalled climate talks in Copenhagen in 2009 and the climate meeting in Paris in late 2015, arguing that a vital part of why the talks at COP15 in Copenhagen had stalled was the issue of burden sharing. The study was structured around experiments where the participants were assigned
different roles, some as rich countries who had been contributing a lot to climate change, and vice versa. Fairness criteria such as ability to pay, vulnerability and historical responsibility were all found to be important aspects of how to share the money to help combat climate change, especially for the poorer nations, but also for the richer countries (Gampfer, 2014, p. 75). In other words, fairness matters, and it is a vital point on which the 'justice-framing' presented in this paper rests. Some scholars pursue this point, for instance Brooks who states that “Climate change should not be a debate about the science, but about the pursuit of global justice within the context of a global scientific consensus” (2013, p. 10).

Indeed, it seems in the literature that justice is a fairly unchallenged concept. There's general consensus regarding the notion that justice is desirable. Much the same way democracy has been argued to represent an 'end of history' (Fukuyama, 1989), few people would challenge the statement that justice is, to put it in colloquial terms, good! The exact model for justice is another matter and naturally subject to debate, but most models would incorporate some sort of equity measures. One famous theory is Rawls' liberal 'justice as fairness' where inequality only is allowed if it benefits the people who are worse off (Rawls, 1971). That model stands in stark contrast to the reality of climate change, where the riches of a few is arguably the main driver of greenhouse gas emissions, which in turn will affect the worse off people more severely than the rich. As early as 1992 the United Nations Framework Convention on Climate Change highlighted equity as the very first principle on which to build the global mitigation effort. The parties should pursue this endeavour “... on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities” (UN, 1992, p. 4), albeit not specifying this principle very much further. The latest report from IPCC is also full of references to equity and the importance of understanding the tight connection between inequality and global capacity for climate change mitigation (IPCC, 2015, pp. 34, 76, 80, 128).

In the book “Tillsammans – en filosofisk debattbok om hur vi kan rädda vårt klimat” (Together – a Philosophical Book About How We Can Save Our Climate, my translation), Professor Folke Tersman argues that there is a moral problem due to the fact that even if all greenhouse gas emissions would stop at once, climate change wouldn't stop immediately, thus the need to create resilience and transfer resources to the poorer countries is vital in order to avoid a human tragedy (Tersman, 2009a, p. 30). In an opinion piece concerning the book he reflects “The focus on climate change has also had other positive effects. The awareness that people in poor countries will pay the highest price for global warming while there are people in the rich world who bear the greatest responsibility for it, has brought up issues of global justice on the agenda. (my translation)"
(Tersman, 2009b). However, in a study conducted in the UK, only 45% of young people actually perceived climate change to be an ethical issue (Markowitz, 2012, p. 479). J. Timmons Roberts stressed back in 2001 that global warming is all about inequality. From the creation of the problem, to the mitigation and adaptation efforts proposed, to the harm it will do, there's fundamentally a question of inequality that needs to be addressed (Roberts, 2001, p. 501). Roberts argues that if the rich northern countries are serious about preserving a livable climate, the efforts to mitigate climate change and avert its most catastrophic implications must be accompanied by substantial economic stimulation to the southern economies that are struggling (2001, p. 508). “Equity and ecology must be dealt with together” (Ibid.). Only if the global society comes together, envisioning a sustainable future based on a shared worldview, can the climate threat be averted. That shared foundation on which to build requires a more equal world where a 'bottom billion' isn't left behind (Collier, 2008; Parks & Roberts, 2008, p. 645). Steven Shapiro would agree, and as he writes in his article with the telling title *Inequality is Great Fuel for Climate Change* “Socioeconomic inequality, and the poverty that it spawns, is a primary force behind climate change and its potential to tip Earth's natural balance into long-term decline” (2011, p. 21). The creation of a system where some people have so much, and some so little, is driving for example the unsustainable consumption of non-necessary items created by cheap labour and consumed by the well off. It is also the system in which the most vulnerable are left with almost no resources to climate proof their societies (Shapiro, 2011, p. 22).

Spence and Pidgeon state that positive 'gain' frames were more successful in creating engagement with climate change mitigation, as were an emphasis on social rather than personal goals (Spence & Pidgeon, 2010, p. 656). And the propensity for people to come together around social goals and moral issues such as racial injustice or greedy governance is widely known (Lakoff, 2010, p. 72; Moser & Dilling, 2007, p. 8). Gifford and Comeau found in their study that a motivational and ethical frame greatly enhanced people’s perception of both competence and personal engagement with climate change (2011, p. 1304). Moser and Dilling argue that climate change communication “must reach into deeper and more persistent beliefs, concerns, social norms, aspirations and underlying values to generate motivation” (2007, p. 518).

There is therefore a connection to be made between, firstly, what the empirical data and scholars make of the current state of the world when it comes to the severity of both the climate threat and the massive inequality, and secondly, about Hulme's depiction of climate change as a living and moldable idea (Hansen, 2010; Hulme, 2009, p. xxv; IPCC, 2015). Such an idea, it seems, could be used to work for humanity, rather than something to battle and conquer. And as previously stated,
the study that has lent its basic framings to this essay came to the conclusion that a catastrophe-framing “inspires inaction” whereas a focus on justice and equity is empowering (Shanahan, 2007, p. 3). As previously explained, however, in the framings used for Shanahan's study the justice frame is solely focussed on wealthy countries' obligation, or perhaps opportunity, to help poorer more vulnerable communities/countries (2007). In my experiment, climate change is framed as an additional motivation for pursuing global justice, highlighting the research suggesting that more equitably shared resources is a requirement for effective climate mitigation and adaptation. One could argue that in order to qualify for the epithet “sustainable development” both a plan for ecological and economic justice is necessary. This way of framing climate change mitigation aims at merging these two necessities.
Results and empirics

Demographics and general comments

Slightly more women than men responded to the surveys, almost exactly mirroring university as a whole, where around 60 percent are women and 40 percent are men. As previously mentioned, I was striving to accomplish a broad representation of students, and the statistics seem to indicate that it was at least in part successful, even though I did not have the resources to exactly choose respondents to create a near perfect representation. All three hundred surveys were handed out, and of those, 287 were returned and properly filled out. The largest group of respondents was majoring in social science (80 people), other large groups were medical students (35), teachers (32), biology students (28), future economists (19) and psychologists (17) and an additional 76 people who studies everything from music and theology to cognitive neuroscience and geography. The median age of the respondents was 22,5 years and the majority were studying on a bachelor level, although there were both relatively large groups of master- and folk high school students. On a political left-right scale ranging from 1-7, the median number was 4, the mean was 3,7, so leaning slightly to the left, and there were students representing both ends of the scale as well. The vast majority was however centered around 3-5.

A methodological note: the first statements that were posed were chosen so that they would not be too personal and therefore difficult to answer and carrying a risk of influencing the other questions (all questions were posed in Swedish, all examples given are translated. The Swedish word 'anser' was often used in the statements and will here be translated into 'think').

For the different empirical results, regression analyses were used, as well as general statistics calculated by the statistical aide R (R-commander to be precise).
Results from regression analyses

<table>
<thead>
<tr>
<th>Car</th>
<th>Food</th>
<th>Luxury</th>
<th>Pol. Agenda</th>
<th>Climate Adaptation</th>
<th>Solution other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Just.</td>
<td>t-value 1,092</td>
<td>t-value 0,224</td>
<td>t-value 0,613</td>
<td>t-value 1,067</td>
<td>P &lt; 0,05 *</td>
</tr>
<tr>
<td></td>
<td>t-value 0,224</td>
<td>t-value 0,613</td>
<td>t-value</td>
<td>t-value 2,257</td>
<td>P &lt; 0,05 *</td>
</tr>
<tr>
<td>Cat.</td>
<td>P &lt; 0,01 **</td>
<td>t-value 2,761</td>
<td>P &lt; 0,001 ***</td>
<td>t-value 2,098</td>
<td>P &lt; 0,001 ***</td>
</tr>
<tr>
<td></td>
<td>t-value 2,761</td>
<td>P &lt; 0,001 ***</td>
<td>t-value 3,626</td>
<td>t-value 2,169</td>
<td>t-value 1,274</td>
</tr>
</tbody>
</table>

Statistically significant results in bold.

Hypotheses revisited

Hypothesis 1. Exposure to an 'integrated justice' framing will be associated with an increased willingness to personally take responsibility for climate change mitigation than will exposure to a 'catastrophe' framing.

When it came to personal and more concrete questions, the willingness to fill in the higher marks was significantly lower than for the more general societal questions. The statements concerned whether the respondents were willing to change their diet, for example eating less meat, sacrifice some luxury spending such as flying, and opt out of owning a car for environmental reasons. When it came to ‘food’, the mean was 5,4, whereas for ‘luxury spending’ it was 4,1 and for the ‘car’ variable 4,6. The catastrophe framing seems to significantly increase the willingness to alter one’s diet (p < 0,05). Also, when it came to sacrifice luxury spending the catastrophe frame proves significant (p < 0,001), as well as for the car variable (p < 0,01). Neither the answers to the statement that read “I think that I ought to do more to combat climate change” nor the one’s about how worried the respondents felt about climate change, produced any significant results for either framing.

Hypothesis 2. Exposure to an 'integrated justice' framing will be associated with stronger belief in a grassroots-movement as the main solution to climate change. And:

Hypothesis 4. Exposure to a 'catastrophe' framing will be associated with an increased willingness to attribute responsibility to external actors, such as politicians and corporations, for climate change mitigation.

When it came to societal questions, such as who carries responsibility for mitigating climate change, virtually all respondents claimed that politicians and corporations did very much so. ‘Politicians responsibility’ had a mean of 6,2 and ‘corporations’ 6,3 out of a possible 7. None of the framings seemed to have an effect on this issue, and neither did they have any significant influence on the question of ‘private responsibility’, even if this wasn't as crystal clear for everybody, with a
mean of 5.7. The justice framing was thought to be a possible inspiration for a sense of private agency and responsibility, and vice versa that a catastrophe frame would encourage processes of pushing responsibility away from oneself to corporations and politicians. Neither of these hypotheses received any confirmation from the surveys.

On a similar note, the question of whether the solution to the climate issue would primarily come from governments and the EU/UN, or from a grassroots movement, the hypothesis was that a justice framing would place the solution more in the general public’s hand, but no significant effect of the framings could be observed in the data. However, there was a third option for this question, a chance to answer freely. The justice frame proved to have an effect on this option, at p < 0.05, where a majority of the responses were 'both governments and the general public are necessary' (46 out of a total 56, the rest focussing on things such as a new economic system and technological advances). A majority of the answers, however, was still 'top down' regardless of framing, with a total of 180 answers.

Another statement that the respondents were asked to respond to was: “I think that efforts to prevent serious climate change should be given higher priority on the political agenda”. The catastrophe frame had a significant impact on the political agenda question. If controlling for the demographic variables discussed in the previous paragraph, it was significant at p < 0.05. It was not specified whether the political agenda was meant as the Swedish- or the international context, which perhaps is a slight validity concern, since it is hard to know what the respondents mean with their answers. But it is clear that the people who were exposed to the catastrophe frame, to a higher degree than those who were exposed to the justice frame, wish to see the climate question higher on the agenda. These hypotheses therefore receive little or at least irresolute support from the data, further down I will analyse why I think that is.

Hypothesis 3. Exposure to an 'integrated justice' framing will be associated with an increased willingness to contribute to international climate change mitigation efforts than will exposure to a 'catastrophe' framing.

One statement that the respondents were asked to respond to was: “I think that rich countries should increase climate aid to poor countries”. Generally, the students agreed strongly with these statements with 'political agenda' receiving a median of 7, the highest alternative possible, and a mean of 6.2. 'Climate aid' was not very far behind with a median of 6 and a mean of 5.8.

For the climate aid question, where the hypothesis was that a justice framing would make people more inclined to give aid and even out inequality, there were no significant effects of the framings. This was a bit surprising, since it seemed like one of the questions most easily connected to a certain frame. As will become more and more evident, however, the justice frame did not seem to
have much of an effect on either of the questions or statements.

*Hypothesis 5. Exposure to a 'catastrophe' framing will be associated with an increased willingness to climate proof one's own geographical area than will exposure to an 'integrated justice' framing.*

When it comes to climate adaptation, here operationalized as whether Sweden should spend more money on adapting coastal towns to rising sea levels, the results are a bit different. Both the justice (p < 0.05)- and the catastrophe (p < 0.001) frames are statistically significant, albeit on different significance levels. The catastrophe frame produced a significantly higher t-value however, 4.4 compared to the justice frame's 2.3, meaning that there is evidence to suggest that this hypothesis was correct.

**Summary**

The justice framing only seems to significantly alter the answers to the question of climate adaptation and to some degree which actor that will mainly drive the climate mitigation effort. The catastrophe frame however did in general affect the answers to all the specific personal mitigation efforts, such as whether to give up owning a car, spending less money on luxury items and changing one's food consumption, as well as the 'climate adaptation'- and the 'political agenda' statements.

**Other general findings**

In general, women tended to be more environmentally friendly and concerned, with significant results for a number of variables, for instance 'climate aid', 'corporations' responsibility', 'political agenda', and also on questions regarding 'worry' and whether they could alter their 'diet', which is in line with what other scholars' that have been cited here have found (Gifford & Comeau, 2011; McCright & Sundström, 2013).

Notably however, political orientation was significant for virtually all questions and statements, often at p < 0.001 (e.g. 'car', 'climate aid', 'luxury consumption' and 'political agenda'). In all cases, identifying oneself as further to the left meant being more inclined to mitigate climate change, both on a personal and societal level, and more worried about climate change.
Discussion

Lack of justice effect

Perhaps the most apparent and obvious result of the experiment is the lack of effect from the justice frame. As described in the theory-section, most scholars that I have studied have argued that a positive framing focussed on morality is empowering and gives positive results (e.g. Lakoff, 2010; Moser & Dilling, 2007; Shanahan, 2007; Spence & Pidgeon, 2010). So why is it so different here?

Firstly, to connect with the literature on framing that was reviewed in the theory-section. The mechanism of a frame is to connect an issue that might not carry so much weight in one’s life with another concept or notion that does resonate with one’s own preferences, values and perceptions of reality (Entman, 1993; Nisbet, 2009). This is true both in regards to the fundamental creation of a frame over time, and also in regards to the importance of finding the right words to trigger a connection with that expectedly powerful notion. That leaves us with two options, either, I failed rhetorically in finding the right words to connect people with the idea I was presenting. Or, the notion of, firstly, the basic idea of climate justice, and/or secondly, an integrated climate justice- and socioeconomic equity frame, has not been sufficiently salient in their lives. I was, as I have said before, aware of the possibility of the idea going 'over their heads', not in the sense of lack of comprehension of the words, but simply that it isn't a well established concept in the public discourse.

However, I was expecting the details of my tweaked justice frame to be of little importance to the general effect of the framing, i.e. that the information that wasn't cognitively relatable for the respondents would simply be overlooked and not affect the results. That might be the case, that a simpler justice frame would have achieved the same results, but it could also be that the added information served to impair the effect of the framing.

One such potentially harmful thing could be that the framing was perceived as overly political. Speaking of global economic equality might instead of connecting to an inspiring human rights/harmless justice frame connect to Marxism and a very polarizing and frightening revolution or world governance. Global solutions are inherently scary, since they entail or at least imply coercion and compulsion. But also on a less dramatic scale, the notion of 'economic redistribution' is probably enough for many right-leaning people to activate negative framings, even if justice as a concept is accepted or embraced.

Other scholars cited argued that in order to make a social message stick and be powerful it needs to be processed. In this survey, the respondents weren't even given a proper chance to read the text particularly carefully and/or ask questions about it. And since it arguably is a less common framing, as expressed by for instance Shanahan (2007), the lack of engagement with the concept could have
contributed to the perceived lack of connection with the respondents.

That the justice framing, instead of leading to an increased inclination towards believing in a grassroots movement, showed signs of wanting to include all actors on the global endeavour seems like a reasonable conclusion from the message that I tried to convey. The reason for why that possibility wasn't included in the hypotheses was simply that the question was asked in a way where there was no 'both' or 'all actors' alternative, but in hindsight, it is perhaps an even more plausible answer to the question. The justice frame even explicitly talked about everybody working together and contributing.

Many scholars cited also expressed the view that a justice take on the climate problematique is not a 'quick-fix', but rather a paradigm that could suffice in building a new platform for sustainability. Which leads to the next framing.

**Catastrophe effect**

If the justice frame surprised because of a lack of effect, the opposite is true for catastrophe. For example Shanahan (2007) holds that catastrophe inspires inaction; however, in this experiment all the results of the questions regarding personal mitigation contributions seemed to disprove that. However, as has been previously asserted, a problem with surveys and experiments is that it is hard to ensure or know if there's depth and realism to the answers. There is scholarly support for catastrophe, or other alarming messages, acting as a wakeup call, a first step in propelling towards action (e.g. Moser & Dilling, 2007; O’Neill & Nicholson-Cole, 2009). However, it seems like many of the same scholars are skeptical of the realism of the results of a catastrophe frame. Do these respondents actually feel motivated enough to really do what they have said, is the deep-lying cognitive foundation powerful enough for it to be a robust first step for action? And perhaps more importantly, can people rally around a vision centered on disaster, or is that inherently short term, or at worst destructive?

Another possibility is that my framing failed to tap into the kind of catastrophe- and fear discourse that paralyses. As elaborated upon in the methods part, I did not, for several reasons, opt for an overly dramatic depiction, instead choosing to relatively calmly describe a worst case scenario. I also qualified it by stating that this scenario could be the case if a ‘business as usual’ approach was adopted. There are of-course far more alarmist ways of designing a catastrophe frame.

Another possibility, which goes in line with a lot of the research previously cited, is that the chosen population perceives a catastrophe frame in a different way than the general international public. As previously stated, the Swedish educational system has integrated sustainable development at the core of the curriculum itself. I myself, who would probably be a median representative of this study, has written, discussed, painted, seen movies and done interdisciplinary projects since at least middle
school on this topic. So there ought to be a quite clear conception of the general problematique, as well as many clearly defined tools on how to mitigate climate change in most of the respondents' minds. A similar picture to what I painted in the framing could be seen in the highly acclaimed and influential documentary *An Inconvenient Truth* that contributed to Al Gore receiving a Nobel Peace Prize, a film that was compulsory to see in my high-school years. The kind of processing that scholars have called for in relation to these issues has arguably to some extent already happened for this population (e.g. Moser & Dilling, 2007; Sterman, 2011). What would be characterized as an alarmist fear-inducing framing in other countries could very well be a fairly familiar reminder in the minds of students around 23 years of age in Sweden (Carlsson et.al., 2015). The cognitive connections could instead of leading to a dead end of inaction lead to proactive sustainability projects and inspirational theme days. Other methods would have to be used, however, to reach conclusions on this topic.

In regards to the hypothesis that turned out to be correct regarding protection of one’s own geographical area, operationalized as adapting coastal towns to higher sea levels, some doubts could be raised. Since the catastrophe frame has not had the kind of paralytic and passive effects that was theorized by Shanahan (2007) and others, it might be that the result stem from other explanations than terror management theory (Pyszczynski, 2004). Perhaps the catastrophe frame provided the agency theoretically bestowed upon the justice frame, so that an increased willingness to adapt coastal towns should not be seen as a reactive way of evading mortality, but instead as a sign of a proactive motivation to dedicated climate mitigation efforts. However, the objections raised against a catastrophic vision as a foundation for a sustainable development would still hold true.
Conclusions

The main conclusion to draw from this survey experiment is arguably a reemphasis that framings do matter. Even in a limited setting like a short text in a survey the different framings proved significant for how willing the respondents felt to combat climate change both on a personal and societal level.

However, the general scholarly consensus regarding specific responses to notions of catastrophe and justice has been challenged by the results of this study. Catastrophe seems to be a good motivator for personal action among this population, with significant results for questions about whether one is willing to sacrifice owning a car, spending less on luxury items such as flying and altering one’s diet to reduce impact on the environment. It also made the respondents more willing to put climate change higher on the political agenda and climate proof coastal cities. Nonetheless, question marks remain regarding how the framing was perceived and whether the tendency to act in theory could be translated into constructive real life behaviour. Possible explanations for this effect could be either that the framing failed to induce the kind of fear that it potentially could have, would I have been less constructive and more dramatic, or that this kind of catastrophe narrative already resonates with Swedish students around 22,5 years of age since they have processed these questions throughout their school years and therefore already have existing constructive behaviours connected to the narrative.

Similarly, the justice frame surprised by not producing the results typically attributed to it in the literature. Only the questions regarding climate adaptation (where the catastrophe frame had an even higher t-value) and the question regarding through which actor climate change primarily will be successfully mitigated, where the alternative 'other' (mostly specified as 'both'- or 'all' actors) correlated with the justice frame. Explanations for the lack of justice effect could either be attributed to a rhetorically faulty description of the justice narrative, a negative impact of my additional integration of socioeconomic justice, or the lack of climate justice as a salient concept in the Swedish public discourse.

Two other notable findings is that women and people identifying themselves as politically leaning left in general showed strong correlations with positive attitudes to climate change mitigation, indicating a significant societal and academic challenge to depoliticise the issue in order to get the necessary broad support, as well as working with attitudes among men.

Possible contributions to this field of research would be qualitative studies investigating the impact of the integrated approach Sweden has taken in regards to sustainable development in the curriculum, as well as studies investigating more thoroughly how framings such as the ones' in this study are perceived and what feelings and motivations they evoke. Since a case has been made in
this thesis that climatic and socioeconomic justice inevitably must go together, more research into
the area of how to successfully create a salient, inspiring and constructive justice framing would be
welcome as well.
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Introduktion

Klimatförändringarna har blivit ett mer och mer aktuellt ämne, där många av världens regeringar, och många av världens forskare i olika discipliner diskuterar hur vi bäst kan hantera problematiken kring en varmare värld, vilket bland annat kan ses av det stora deltagandet på COP21, det stora klimatmötet i Paris i december. Den här undersökningen ämnar att undersöka dina attityder kring klimatförändringsarbete.
Besvara följande demografiska frågor:

Kön
- Man
- Kvinna
- Annat

Ålder: _______

Högsta påbörjade utbildningsnivå:
- Gymnasie
- Folkhögskoleutbildning
- Kandidatexamen
- Mastersexamen
- Forskarutbildning

Huvudsakligt ämnesområde: ______________


Mycket vänster 1 2 3 4 5 6 7 Mycket höger
Läs följande information

Om världens länder fortsätter att släppa ut växthusgaser och hugga ner skog i samma takt som nu menar världsledande klimatforskare att klimatförändringarna hotar hela människohetens existens. Havsnivån riskerar att höjas flera meter genom att polarrisar och glaciärer smälter, livsviktiga ekosystem kan sätta ur spel, och miljarder människor som bor runt kuster kan tvingas fly sina hem samtidigt som extrema väderfenomen som stormar och torka blir mångdubbelt vanligare.

Jag har läst informationen
Läs följande påståenden noggrant och svara sedan efter hur hög grad du håller med. Ringa in en siffra.

Jag anser att arbetet för att förhindra allvarliga klimatförändringar bör prioriteras högre på den politiska agendan:
Instämmer inte alls 1 2 3 4 5 6 7  Instämmer helt

Jag anser att rika länder bör öka klimatbiståndet till fattigare länder:
Instämmer inte alls 1 2 3 4 5 6 7  Instämmer helt

Jag är villig att avstå lyxkonsumtion, såsom flygresor, av klimatskäl:
Instämmer inte alls 1 2 3 4 5 6 7  Instämmer helt

Jag är villig att ändra mina matvanor, ex. äta mindre kött av klimatskäl:
Instämmer inte alls 1 2 3 4 5 6 7  Instämmer helt

Jag är villig att välja bort att äga en bil av klimatskäl:
Instämmer inte alls 1 2 3 4 5 6 7  Instämmer helt

Jag anser att Sverige bör lägga mer pengar på att anpassa till exempel kuststäderna till högre havsnivåer:
Instämmer inte alls 1 2 3 4 5 6 7  Instämmer helt

Jag anser att jag borde göra mer för att motverka klimatförändringarna:
Instämmer inte alls 1 2 3 4 5 6 7  Instämmer helt

Jag är inte särskilt orolig över klimatförändringarna:
Instämmer inte alls 1 2 3 4 5 6 7 Instämmer helt

Hur stort ansvar anser du att politiker har för att motverka klimatförändringarna?
Inget ansvar 1 2 3 4 5 6 7 Mycket stort ansvar

Hur stort ansvar anser du att privatpersoner har för att motverka klimatförändringarna?
Inget ansvar 1 2 3 4 5 6 7 Mycket stort ansvar

Hur stort ansvar anser du att företag har för att motverka klimatförändringarna?
Inget ansvar 1 2 3 4 5 6 7 Mycket stort ansvar

Jag anser att lösningen på klimatproblematiken främst kommer komma genom:

- En gräsrotsrörelse där vanligt folk driver på utvecklingen
- Kraftfullare åtgärder från regeringar/EU/FN

- Annat: _____________________________________________________________
Om du bor i Uppsala med omnejd och kan tänka dig att delta i en fokusgrupp där liknande frågor diskuteras i 45 minuter vid ett tillfälle de kommande veckorna, fyll gärna in din mailadress här:

______________________

Har du några andra synpunkter/funderingar kring undersökningen?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Läs följande information

Klimatförändringarna är en stor samhällsutmaning som påverkar hela jordens befolkning, fler och fler människor menar dock att de kan ses som en möjlighet för att bygga en mer jämlig och rättvis värld. Rikare länder har stått och står fortfarande för de största växthusgasutsläppen, men klimatförändringarna kommer drabba fattigare länder värre på grund av geografiska tillfälligheter och mindre resurser att motverka effekterna av till exempel havsnivåhöjning och extrema väderfenomen. Därför menar forskare att alla länder måste hjälpa åt att skapa en mer jämlig värld där skillnaderna i mängden utsläpp minskas, samtidigt som resurserna för att skapa motståndskraft mot klimatförändringarna delas mer lika över världen. På så vis kan klimatförändringarna bli ett verktyg snarare än ett hinder i bygget av en mer rättvis värld.