Public opinion on climate change:

Does framing climate change as an issue of national security, economy or health increase public support for fighting climate change?

Bachelor Thesis – Tara Bary

June 12, 2017

Bachelor International Relations and Organizations

Institute of Political Science

Leiden University

Tara Elisabeth Bary

S1585215

96tarabary@gmail.com

Abstract:

Despite the scientific consensus that anthropogenic global warming is occurring, public opinion about the existence and seriousness of climate change is mixed. Several studies found a political controversy around the issue: people with a right-wing ideology are generally less likely to belief in human caused climate change and to support mitigation, than left-wing people. In order to address this global challenge, many academics have researched climate change communication and framing. This paper adds to this, by investigating whether framing climate change as an issue of national interest increases support for addressing global warming. This experimental survey research (N=137) randomly assigned participants to one of the three frames (security/immigration, economy, health) or unrelated message (control group) and subsequently measured attitudes towards climate change (DV). Furthermore, it explored the relationship between a person's left-right self-placement and climate attitudes. Finally, it was researched whether the effects of frames on climate attitudes are different for people with different ideologies. The expectation was that frames would spark a higher increase for right-wing people than for left-wing persons. Regression analysis results show that the security frame increases an individuals' willingness to contribute money, time and energy to fighting climate change with 0.866 on a 7-point scale (p=.014). Further, it finds that left-wing people score up to 1.5 higher on their willingness to contribute that than right-wing people (up to 1.5, p=.0004). No interaction effect was found between political ideology and successfulness of frames. Results suggested that certain frames might be more convincing for people with certain ideologies, but this differs per aspect of climate change opinion. Although this research is not generalizable to the Dutch population, it adds to existing knowledge and attempts to inspire not only future academics, but also world leaders to aspire public engagement with climate change. (294 words)

Keywords: *climate change, global warming, public opinion, framing, mitigation and adaptation, public engagement, communication, attitudes, polarization, left-right divide, political ideology, securitization of climate change*

By T. E. Bary (s1585215)
Supervisor: Dr. M. F. Meffert

Contents:

Does framing climate change as a national issue of security, economy or health, increase public support for fighting climate change?

Section one: introduction

The scientific consensus (over 97% of scientists) is that human caused climate change is happening (Maibach, Myers & Leiserowitz, 2014, p. 295). Climate change poses severe threats for human life on earth, such as extreme draughts, floods, sea level rise, air pollution, distinction of flora and fauna, extreme weather and natural disasters (Intergovernmental Panel on Climate Change [IPCC], 2014; World Bank, 2012). New public policies and changes in individual behavior are necessary to address climate change (Kim & Wolinsky-Nahmias, 2014). Although most scientists agree that mitigation and adaptation should be priority, public support is mixed (Maibach et al., 2014). In 2013, only 43% of the United States' citizens believed "most scientists think global warming is happening" (Leiserowitz et al., 2014, p. 35). Although skeptical voices are less prominent in the Netherlands, Dutch public awareness and concern about climate change is also mixed (Hagen, Middel & Sijawka, 2016).

The controversy in public opinion about climate change is divided along political ideological lines. In the U.S., political ideology or party is the most consistent factor in influencing public concern with environmental issues (Hamilton & Saito, 2014). Democrats are much more likely to accept climate science and support mitigation than Republicans (Hamilton & Saito, 2014, p. 218). Likewise, in other countries research has shown that people with a left-wing political ideology are more likely than right-wing people to acknowledge the seriousness of climate change (Kvaløy, Finseraas & Listhaug, 2012; McCright, Dunlap & Marquart-Pyatt, 2016).

The difference between the scientific attitude and public attitude on climate change is a problem, as it is an obstacle for effective steps in mitigation and adaptation. Public opinion on climate change influences whether an individual supports mitigation and engages in sustainable behavior. Moreover, the international response on climate change is dependent on public opinion, as the public's concern with the issue affects which actions are taken (Lorenzi & Pidgeon, 2006). Therefore, not only climate change itself, but also the inaccurate public perception of it, is a global challenge (Kim & Wolinsky-Nahmias, 2014).

Many academics stress the need for research about public engagement with the issue of climate change (Nisbet, 2009, p. 22; Hmielowski, Feldman, Myers, Leiserowitz & Maibach, 2014, p. 879; Connor et al., 2016, p. 473; Schäfer, 2012, p. 537; Myers, Nisbet, Maibach, Leiserowitz, 2012, p. 111). The topic of communication about climate change is much investigated, as this is the key in sharing information about it. Communicating scientific evidence has proven to be insufficient to persuade people about the urgency of climate change. However, exposing people to a particular frame about climate change might increase their engagement with the issue. Framing is relevant, since it sets the process in motion where people reorient their opinion about an issue (Chong & Druckman, 2007, p. 104). A frame is considered successful if it affects audiences' attitudes and behavior (Chong & Druckman, 2007, p. 109). If the frame links the environmental issue to an already salient issue, interest could be raised. Although effects of climate frames have been researched (Egan & Mullin, 2017, p.9), insufficient knowledge exists about what kind of frames are successful for what kind of people, especially for non-American countries like the Netherlands.

This paper researches whether framing climate change as an issue of national benefit increases public support for addressing climate change. Dutch public opinion research shows that citizens perceive immigration, economy and health as top-priorities (*Sociaal en Cultureel Planbureau* [SCP], 2016, pp. 15-16). Therefore, these areas will be used as frames for this research with immigration being part of the security frame. The national security frame is especially relevant since the Chief of the Ministry of Defense Tom Middendorp is publicly emphasizing climate change's relevance for security (Ministry of Defense, 2016). His words will be used to phrase a pro-climate action security frame. The economic frame touches into areas citizens are already concerned about: poverty within the own country and employment (SCP, 2016). This frame includes the Groningen Seaports Director's statement that "multinationals cannot survive without thinking green" (NOS, 2017a). The health frame emphasizes the risks of climate change for public health and argues that fighting climate change benefits people's health (Knol, 2014).

The research question is whether framing climate change as an issue of national security, economy or health can increase public support for fighting climate change. An experimental survey investigates effects of being exposed to a particular frame on someone's attitude towards climate change. This attitude will be measured

with the following indicators: belief in the existence of human caused climate change; the seriousness of the problem; the need for mitigation by governments, companies and individuals; individual willingness to contribute to solutions; and support for greenhouse gas reduction policy. The effects of the frames will be compared with a control group.

A Dutch case study is practical and relevant. The political landscape is scattered and people perceive different issues as important, which makes it likely that certain frames appeal to certain people. Also, the coexistence of recent Dutch public opinion research about saliency for the three areas (SCP, 2016), with recent news-developments in those areas suggests that successful frames could be created. The results show whether the three pro-environment frames work to change public attitudes and behavior. Further, the analysis investigates the political controversy around the issue. The effects of frames on climate attitudes are compared between people with different ideologies.

Section two: theoretical framework

Public perception of climate change science

Despite the scientific evidence and severe dangers of anthropogenic climate change, relevant actors insufficiently engage in mitigation and adaptation (Neslen, 2017; Mckibben, 2012; van den Broeke et al., 2016). An obvious reason for the lack of climate action is the fact that public opinion about the existence and seriousness of climate change is mixed (Maibach et al., 2014). Although empirical evidence has driven scientists into a consensus, it has driven the public into a political controversy (Maibach et al., 2014). Studies show growing climate skepticism in the latter 2000s in the United States and Western Europe (Capstick, Whitmarsh, Poortinga, Pidgeon & Upham, 2015). Public attitude on climate change is fluctuating over time. Although there has been a growing concern about climate change in many parts of the world, recent research points to a lot of skeptics about the existence and seriousness of human caused climate change (Capstick et al., 2015).

In the Netherlands, public opinion about climate change is mixed as well. Public opinion research finds that only 21,2% of the Dutch population perceived "reducing climate change" as a very important policy priority (Hagen et al., 2016, p.

175). This score was much lower than the perceived importance in Spain, Germany and the United Kingdom. Furthermore, 36,7% of Dutch survey participants believed climate change should not be addressed by the government at all, or only as a low priority (Hagen et al., 2016, p. 175). Likewise, the outcome of the Dutch elections of March 2017 suggests that there is no clear-cut public support of climate action. Despite growth amongst green-parties, three of the four largest political parties lacked accurate focus on fighting climate change (Mommers, 2017).[1]

Supporters and opponents of mitigation: left-right divide

Much research is done on the American public opinion about climate change, which correlates with the partisan and ideological divide between Republicans and Democrats. Polling results between 2000 and 2008 show that this divide has sharpened: an increasing majority of Republicans questioned anthropogenic global warming science and its urgency, while Democrats increasingly accepted the science and expressed concern. This ideological divide stayed after correcting for knowledge and education (Nisbet, 2009, p. 14). Findings of Hmielowski et al. (2014) confirm the increasing polarization in opinion about climate change. Their research shows that people's opinion is highly dependent on partisan media and the conservative-leaning media articulates much more skeptical and denying attitudes towards climate change. Republican-leaning media creates doubt about the validity of science in general, resulting in doubt about the existence of climate change, while non-Republican media increases trust in science, resulting in certainty that climate change is happening (Hmielowski et al., 2014).

Several recent studies investigated whether the partisan-ideological divide for climate change opinion also exists in other countries (McCright et al., 2016). Kvaløy, Finseraas and Listhaug (2012) analyzed 47 countries, excluding the Netherlands, and found that the public's perception of the seriousness of climate change is indeed

---

[1] The four biggest political parties in the Netherlands after the elections in March 2017, are People's Party for Freedom and Democracy [VVD] (33 seats), Party for Freedom [PVV] (20 seats) and Christian-Democratic Appeal [CDA] (19 seats) and Democrats 66 [D66] (19 seats). By using a parliamentary search engine (watstemthetparlement.nl), Mommers (2017) analyzed voting behavior of political parties within the parliament. He found that the parties VVD, CDA and PVV generally opposed important policy proposals to mitigate climate change. For example, VVD and PVV wanted to keep coal plants open, even though closing them was expected to reduce CO2 emissions with 31%. Also, the VVD, PVV and CDA opposed a CO2-prize, a measure that would improve the functioning of the EU Emissions Trade System. On the contrary, D66 has supported and initiated several proposals to address climate change (Mommers, 2017).

positively correlated with a leftist position on the left-right scale. Likewise, McCright et al. (2016) found that in 14 western European countries, including the Netherlands, public opinion on climate change is divided along the left-right divide. Left-wing people score higher on their belief in climate change and support for mitigation than fellow citizens with right-wing ideologies (McCright et al., 2016). In the Netherlands right-wing persons are less likely to believe that anthropogenic climate change is occurring, to see it as a serious problem, to be personally willing to fight climate change and to support policies to reduce greenhouse gas emissions (McCright et al., 2016, p. 348).

While observing the Dutch political landscape, the ideological left-right divide on climate support is also visible in proposed climate policies by political parties.[2] Generally, ambitious climate-proposals and programs came mainly from the political left, while parties perceived as right-wing often opposed actions to fight climate change (Postma and Luttikhuis, 2017; Mommers, 2017).

Recent Dutch public opinion survey research by the institution *Sociaal en Cultureel Planbureau* [SCP] (translation: Social and Cultural Research Institute) confirms the notion that opinions about climate change are spread along party-ideologies (SCP, 2016, p. 30). Their survey included questions to measure citizens' opinion about government spending on climate issues. Respondents were given 17 areas and they had to judge what should be done with expenses, either more or less government spending. One of the areas was "contribute to tackling international environmental problems and climate change" (SCP, 2016, p. 14). The average result for each area could be between -100 (much less) and +100 (much more), and this area scored +16 (SCP, 2016, p. 14). Respondent's judgments about government spending were compared, by distinguishing between their political party preferences. Regarding

---

[2] The left-right dimension is much more complex than the way it is approached in this research. For the sake of practicality, this research does not distinguish extensively between different aspects of left-right in the Netherlands, such as conservative-progressive; solidary economy-individual responsibility; or culture: international- national solidarity (NOS, 2017c). For background knowledge about the political landscape in the Netherlands, see Andeweg & Irwin, 2014, and for the left-right conceptualization, see Jahn, 2010. This research reviewed the overall left-right placement of Dutch political parties, made by the Manifesto Project (as referred to by Norsk Senter for Forskningsdata, n.d.). The Manifesto Project is a scientific community with extensive content analyses of parties' electoral manifestos, so it is a valid source to determine parties' policy positions and placements on the left-right scale (https://manifestoproject.wzb.eu).

the issue of climate, the allocated resources differed considerably. People with a left-wing ideology were most in favor of increased spending (Green Left: +68, Party for the Animals: +66), followed by people voting Democrats 66 (+46) and Labour Party (+45). Other positive scores were given by Christian Union-voters (+16), swing voters (+11), Socialist Party-supporters (+9) and Christian Democratic Appeal-voters (+7). Only people preferring Party for the Freedom (-31), 50PLUS (-10) and People's Party for Freedom and Democracy (-5) generally wanted the government to spend less money on this issue (SCP, 2016, p. 30). These results illustrate that in the Netherlands, there is a political controversy around climate change.

Reasons for differing attitudes on climate change

McCright et al. (2016) talk about underlying reasons for the left-right divide for climate change. They conclude that acknowledging and addressing climate change, poses a greater challenge to right-wing values than to left-wing values (McCright et al., 2016, p. 434). Right-wing people probably have a weaker belief in climate change, because they think dealing with climate change will limit private property rights, erode national sovereignty, and increase government intervention (McCright et al., 2016, p. 348, 350). The latter is touches into the left-right controversy about government intervention in the economy. Progressive left-wing tends to be pro-government intervention, whereas conservative right-wing generally thrusts market mechanisms and wants to minimize regulation (Imbeau, Pétry & Lamari, 2001, p. 6). According to Klein (2014), acknowledging climate change, would be acknowledging a huge form of market failure and accepting that proper action should be taken, which is not in line with the ideology that the market regulates itself. Climate change could be considered as the ultimate proof that a self-regulating market does not function perfectly. People do not like to admit, not even to themselves, that their worldview is not in accordance with scientific facts.

Bain et al. (Bain et al., 2015, as cited in Connor et al., 2016, p. 465) find another aspect of personal values that play a role someone's seriousness about climate change: the communality domain. The more warm and caring a person is to others, the higher willingness to address climate change (Connor et al., 2016, p. 465). Thus, people with strong empathic values are generally more willing to fight climate change

than people pursuing self-interest.[3] Therefore, convincing people that acting upon climate change is in their own interest, has the potential to engage more people with the issue.

Other personal characteristics are found that positively correlate with a person's perceived seriousness of climate change, such as high education, post-materialism and being religious (Kvaløy et al., 2012, pp. 11, 14). Kvaløy et al. expected young people to be more concerned with the climate, but found that especially middle-aged people where concerned (2012, p. 17). Another important determinant is gender, as research consistently found that women are more supportive of addressing climate change (Brody, Zahran & Himansu, 2008, pp. 75, 88).

The upper two sections, about the left-right divide in climate attitude, and reasons for differing attitudes, discussed many relevant findings. Both in the U.S. and other countries, there is political controversy around climate change. Likewise in the Netherlands, party behavior and public opinion showed that left-wing is generally more pro-climate than right-wing. An underlying reason for the left-right divide might be that right-wing ideology is harder to combine with acknowledging climate change. To a certain extent, this realization helps to understand the tension between right-wing ideology and climate change science. Other characteristics, influencing one's position on climate change, are empathy, education, post-materialism, religion, age and gender.

Persuading the opponents of urgency climate change: framing

There is a huge communication problem around climate change. As solely scientific evidence is insufficient to persuade people of the urgency to act upon climate change, the research areas communication and framing is relevant. A successful frame changes the way a person perceives a concept (Chong & Druckman, 2007, p. 104), by creating belief in the content and importance of an issue (Lecheler & de Vreese, 2012). Strong frames include symbols, heuristics and links to partisan identity, and

---

[3] It is relevant to make the link between communality domain and political ideologies. Research on the links between people's personality and their voting behavior, found that left-wing people generally are more empathic. They score significantly higher on values like friendliness and agreeableness, while right-wing people score higher on assertiveness and self-confidence (Chirmbolo & Leone, 2010). If it is indeed the case that right-wing people are more assertive in pursuing self-interest, this suggests that using self-interest phrasing could work to overcome the political ideology controversy around climate change. Taking a self-interest angle has the potential to persuade right-wing people of the urgency of climate change.

are effective in shaping opinion (Chong & Druckman, 2007, p. 111). Frames can offer a solution for the communication problem around climate change, as a successful frame could change the way people perceive climate change.

Nisbet (2009, p. 15) states that tailored frames are necessary to overcome "communication barriers of human nature, partisan identity, and media fragmentation". Frames communicate what the problem is, who/what is responsible and what should be done about it (Nisbet, 2009, p. 15). Frames link two concepts with each other, so that after interpreting it, the audience accepts that connection. A specific frame is often only relevant if the concepts are in line with the interpreter's pre-existing worldview (Nisbet, 2009, p. 17). Ideally, influential peers frame information in a way that resonates with people's background and addresses personal information-needs (Nisbet, 2009, p. 22). With regards to framing climate change, insufficient research exists about which frames work for which audiences (Nisbet, 2009, p. 22).

Content and effects of climate change frames

Nisbet's (2009) extensive discussion of possible climate frames suggests they can serve as effective tools to increase interest. Academics have discussed several possible climate change frames. In this section, the mainstream environmental frame will be explained, followed by the economic, health and national security frame. Finally, alternative frames will be discussed briefly.

As Myers et al. explain, the dominant historical frame of climate change stresses the environmental aspects (2012, p. 1106). This frame emphasizes the consequences for ecosystems and the ecosystem-benefits of mitigation and adaptation (2012, p. 1107). Myers et al. researched six climate-attitude groups, representative for the U.S. population: the alarmed; concerned; cautious; disengaged; doubtful; dismissive. They compared the effects of environmental-, health-, and national security frame, on respondents' feelings of hopefulness and angriness. The environmental frame did not spark much hope amongst the three skeptic-groups (Myers et al., 2012). Connor et al. (2016) compared the nature frame with health, development, communality and competence, to research which frames are more likely to be passed on in a Facebook-like environment. The conventional nature about plants, animals and natural disasters (Connor et al., 2016, p. 465) was most likely to be shared (2016, p. 470).

The economic development frame portrays climate change as an opportunity for economic growth. According to Nisbet, it engages a wider public by using words like "innovative energy technology", "sustainable economic prosperity" and "creating green jobs" (2009, pp. 19-20). Connor et al. used the development frame by stating that climate action will result in a future where "we will be using efficient technologies that will benefit our economy" and "have a more prosperous society due to the creation of new jobs and industries" (2016, p. 467).

Another frame Nisbet discussed is the public health frame. It has the potential to speak to new audiences concerned with health, by focusing on direct and nearby impacts. The frame "stresses climate change's potential to increase the incidence of infectious diseases, asthma, allergies, heat stroke, and other salient health problems, especially among the most vulnerable populations: the elderly and children" (Nisbet, 2009, p. 22). Connor et al.'s (2016, p. 467) health frame states that cleaner air will be healthier, and less infectious diseases will spread (Connor et al., 2016, p. 467). Research has shown that a health frame can be successful (Maibach, Nisbet, Baldwin, Akerlof & Diao, 2010). Maibach et al. found that skeptic groups, who read a health frame of climate change, judge that information as compelling and useful (Maibach et al., 2010, p. 8). Similarly, Myers et al. showed that people of all segments got hope from the health frame (2012, p. 1110) and acknowledged its potential to engage people (2012, p. 1111). Whitmarsh (2008) combined the aspect of direct experience and health, and found that people whose health had been affected by air pollution are more convinced about climate change's risks and are more pessimistic about its consequences (Whitmarsh, 2008, p. 368).

The national security frame is tested by Myers et al. (2012), and highlighted climate change's risks to U.S. national security and benefits for U.S. national security of adaptation and mitigation (2012, pp. 1107-1108). This frame sparked a lot of anger within the skeptical groups. The effect of this anger on climate action is not clear-cut. Myers et al. (2012) state that anger within the groups aware of climate change, probably leads to action consistent with adaptation and mitigation. Conversely, for people skeptic about anthropogenic climate change, anger probably leads to action inconsistent with adaption and mitigation. Therefore, the high amount of anger within the denier-groups is probably an undesirable effect of the frame (2012, p. 1109). Their research shows that the security frame does not necessarily increase climate engagement, even adverse effects can occur (2012, p. 1109).

By T. E. Bary (s1585215)   12
Supervisor: Dr. M. F. Meffert

Many other frames have been investigated, such as the catastrophe, accountability, competence and morality frames (Nisbet, 2012). The catastrophe frame starts from an environmental angle but emphasizes the visual and dramatic effects. Al Gore's (2016) *An Inconvenient Truth* is the obvious example, and portrays climate change as an "environmental Frankenstein Monster". Problematic consequences are increased polarization, resistance and hopelessness. The accountability frame emphasizes importance of expert understanding and protecting it from being obscured by politics (Nisbet, 2009, pp. 19-20). The accountability frame has similarities with Connor at al.'s (2016, p. 467) competence frame, which frames addressing climate change as learning new skills to solve societal problems and advancing scientific knowledge. The morality and ethics frame, as well as the religious, emphasizes respect for the earth and living creatures (Nisbet, 2009, p. 21). A major example took place in June 2015, when Pope Francis expressed the need to address climate change and perceive it like a moral imperative (Li, 2016).

Risks of frames

According to Lecheler and de Vreese, the intention of a frame is to create belief in the content and importance of the issue (2012). Although climate frames might appear as the ultimate way to engage people with climate change, undesired consequences can occur. Several researchers detected the "boomerang-effect"-risk, which occurs when climate frames result in negative feelings and reduced support for climate policy (Hart & Nisbet, 2012; Zhou, 2016).

Myers et al.'s results illustrate this (2012, p. 1107). Their national security frame resulted in increased anger and chance of behavior countering mitigation and adaptation amongst climate skeptics (2012, p. 1109). It should be kept in mind that this effect is not likely to take place in all circumstances. Besides the fact that it is U.S. research, there are many different ways to link national security to climate change. The part of their frame that was showed consists of quite formal language and seems without a particular partisan view (Myers et al., 2012, p. 1111). According to Chong and Druckman however, strong frames include links to partisanship and ideology (2007, p. 111). The security frame of this research will be different from the frame of Myers et al.. Language and content will be slightly right-wing with regard to the salient issue immigration, underpinned with the security-authority Middendorp.

Another "boomerang-effect" can take place for catastrophic frames, which can

result in less concern and more hopelessness (Myers et al., 2012, p. 1107). Even solely stating that climate change is happening, can spark negative emotions amongst climate skeptics. This counter-response is likely to occur for the catastrophic frame, as the position is extremely far from a skeptics' worldview. Therefore, the challenge while phrasing a compelling climate change message is to be convincing about the urgency, while avoiding portraying it as an unstoppable terrible disaster. For this research, the introductions of the frames consist of general compelling information about anthropogenic climate change.

While framing climate change, two negative emotions should be avoided: hopelessness and inefficiency. Inefficiency is the belief that an individual does not have the capacity to implement a proposed response to a threat, and that the recommended action cannot effectively mitigate the threat (Myers et al., p. 1107). Myers et al. showed that those two negative emotions correlate with ignoring climate change and rationalizing non-action. Consequently, strong climate frames should create hope, as well as the idea that something can be done about it. A way to do this is using success stories and easy beneficial solutions.

Inspiration for frames: what areas are salient to Dutch citizens?

It order to increase interest of Dutch citizens for climate change, frames should link to areas that appeal to them. Recent national survey research shows what areas are salient to Dutch citizens (SCP, 2016). As mentioned, one question was what should be done with government expenses for 17 areas. Four areas people think most money should be spend on are health; jobs; fighting poverty in the Netherlands and education (SCP, 2016, p. 15). Another question showed that people are concerned about healthcare and economy (SCP, 2016, p. 16). Potential links between these issues and climate change, are negative health implications of polluted air, and creating new sustainable jobs, which could in turn help tackling poverty amongst Dutch citizens.

Another salient area for citizens is immigration and integration, as many citizens feel very negative, angry, or ashamed about this issue of Dutch society (SCP, 2016, p. 16). Since 2015, immigration and integration is perceived as the biggest national problem (SCP, 2016, p. 16). Therefore, this issue could raise interest for climate change. There is much evidence for the link between climate change and security issues, like conflicts and migration flows (Ministry of Defense, 2016; Smith & Vivenkananda, 2007; Raleigh & Urdal, 2007; Hsiang, Burke & Miguel, 2013).

Researchers investigated the relationship between climate change and refugees, and found several cases where environmental change indirectly sparked forced migration (Gleditsch, Nordas & Saleyan, 2007; Boano, Zetter & Morris, 2008). Mainstream media like NOS and BBC discussed the link as well, with terms like "climate refugees/migrants" (NOS, 2016; Barnes, 2013). The combination of a growing concern for the issue of migration, as well as growing attention for the link between climate change and migration, suggests framing could engage people with the climate.

From literature review to hypotheses

As Dutch people consider health, economy and immigration, as salient, these areas will be linked with climate change. The first hypothesis (H1) is that reading one of the three frames will increase an individual's support to fight climate change. Additionally, it will be tested whether other personal characteristics (gender, age, level of education and religiousness) significantly affect someone's position towards climate change.

The second hypothesis (H2) is that, regardless of frames, right-wing people are less pro-climate than left-wing people. As the left-right divide section concluded, opinions about the importance of climate change considerably differ for people with different political preferences (SCP, 2016, p. 30). This research expects similar results.

The third hypothesis (H3) is that the effects of the climate frames differ for people with different political ideologies. It is expected that the generated effects of the frames on the climate attitudes, will change after controlling for the variable political ideology. More specifically, it is expected that the messages generally have a bigger impact on right-wing people, as their initial attitude is less supportive and more growth is possible. Besides, previous research has found bigger effects of climate frames on right-wing people's attitudes, than for left-wing persons (Hardist, Johnson & Weber, 2010).[4]

Additionally, it is expected that frames work better if respondents perceive that particular area as important. It will be tested whether there is an interaction effect between importance ratings of areas and effects of frames.

---

[4]Research in the U.S. found that the opinion of Republicans of climate change shifted more, after being exposed to an pro-environment frame, than it shifted for Democrats (Hardist, Johnson & Weber, 2010).

Section three: methodological approach

General Research Design

In order to investigate whether the frames have effect, an experimental survey was conducted and participants were randomly assigned to four different conditions. The full survey and frames are attached in the appendix. The four messages were written in online newspaper-article form. The three experimental groups received the pro-environment national-benefit frames: immigration/security, economy and health. In order to assure general understanding about climate change, all frames stared with an identical introduction on the issue. The control group received an unrelated article, about the Brexit. The survey was created by using Qualtrics.

Participants

The survey-link was spread through the social network of the researcher, with the request to fill it in and announcement that three bol.com gift-card would be raffled. A limitation is that many people in the social network of the researcher are young, high-educated, of rather left-wing ideology, and live in the same cities. Further, people who know the researcher might be aware of her interest in climate change. It was tried to overcome these limitation by attempting to reach people beyond the researcher's direct social network. The main way was the snowball method, as social contacts were asked to share the survey with people they knew, preferably with different personal characteristics. Furthermore, the researcher joined Facebook groups and asked Facebook-users to participate. An advantage was that it offered access to places with people that would otherwise not be reached. However, it was difficult to persuade these people to participate, so the amount of people with (extreme) right-wing political party-preference is limited.

Sample: distributions of characteristics

Of the 137 respondents, 30% were male and 70% female. The age ranged from 17 to 86 (average= 35). Most people were from Leiden (33,6%), Utrecht (15,4%), Amsterdam (7,3%), Breda (5%), and Leidschendam (4,4%). Most people went to university (56,2%), followed by HBO (19%), MBO (8%), havo (6,6%) and post-academic (4,4%). A new variable was created to distinguish between high- (83,2%) and low education (16,8%), where havo is counted as low, since most havo-people

were 50+. Each frame group consisted of between 33 and 36 participants. The survey included questions after the article to measured how well participants understood the news articles, with results indicating they understood the content very well.

Content of the frames

All frames were written in clear and understandable language, with the attempt to convince the reader to the urgency of addressing climate change. The messages were as similar as possible, with regards to length, structure, layout, and balance between problems and solutions.[5] Slightly different was the focus on important actors for addressing climate change. The security frames focused on the government. The economy article too, but also on multinationals. The main focus of the health frame is individual behavior. This section briefly explains the maintained sources and content of the frames.

The introduction consisted comprehensible information about climate change.[6] The security frame was structured around security authority Tom Middendorp's speeches (Ministry of Defense, 2016).[7] The language is slightly political, in order to appeal to people that specifically care about security. It consists the idea of limiting immigration flows by limiting global warming. It accused politicians of only seeking short-time gain, which could be considered slightly populist. Combining the idea of limiting immigration with climate action has the potential to engage people who do not care about the environment yet, especially those with a right-wing position on

---

[5] All frames consisted of around 416 words and four paragraphs. They all started with an identical climate change introduction, and included one picture related to the particular area of the frame. With regards to the content, the messages paid a similar amount of attention to the problem and to solutions.

[6] Basic knowledge about the working of climate change came from reliable sources (IPCC, 2014, World Bank, 2014).The number of 70 billion animals annually is used by the institution Compassion in World Farming (2013) and Oppenlader (2013), who base this on statistics by Food and Agriculture Organization of the United Nations.

[7] Extensive research was done to the Tom Middendorp's position on climate change. His full speech was analyzed, and because of limited word amount only the most relevant arguments were used in the frames (Ministry of Defense, 2016). Further, to develop a clear understanding of Middendorp's vision, his contribution to the Halifax Security Forum in Canada was scrutinized (Halifax Security Forum, 2016). This conference was prior to his speech in The Hague, included a debate with Middendorp and other experts, about climate change in the domain of security and defense (Halifax Security Forum, 2016). Middendorp's arguments about the security risks of climate change are supported by various findings (Raleigh & Urdal, 2007; Smith & Vivenkanada, 2007). The United Nations High Commissioner for Refugees (2015) estimated that climate change will be the cause of millions of refugees. Although it is a complex issue, many academics and policymakers have argued that climate change will lead to mass migration (Salehyan, 2008, p. 315). Links between climate change and conflict are present, as quantitative analysis of 60 studies found a strong causal relationship between climate change and human conflict (Hsiang, Burke & Miguel, 2013).

immigration.[8]

The economy frame emphasized that the green energy transition is an economic opportunity the Netherlands should not miss, which offers the opportunity to create green jobs (Wheeler & Beatley, 2014). It discussed a letter of 90 university professors about the necessity of mitigation (Trouw, 2017). Also, a rather right-wing argument is made about the importation of fossil fuels, as it is stated that this is contrary to our national benefit.[9] Furthermore, it included Groningen Seaports Director Harm Post's statement that multinationals "cannot survive without thinking green" (NOS, 2017a).[10]

The health frame is mainly build on health risks of air pollution and micro-dusk, such as long and heart diseases (Knol, 2014). It is argued that fighting climate change benefits our health, as the quality of the air would improve.[11] This message did not include explicit right-wing language, as the options for it were less evident.

The control group received a news message about the EU and the Brexit. It talked about how the EU is addressing the Brexit, and the differences between the levels of strictness members want to maintain (van Slooten, 2017).

Procedure

Before showing respondents the article, general information like gender, age, place of residence, and level of education was asked. Other characteristics were asked after the

---

[8] The SCP survey research showed that PVV-voters wanted to cut most on climate policy (SCP, 2016, p. 30). On a scale from -100 to 100, the average judgement of PVV-voters about what should be done with government spending on fighting climate change, was minus 31 (SCP, 2016, p. 30). The political party PVV is known for its extreme right-wing position on immigration, as they emphasize the need to limit immigration (Moerman, 2017). Limiting immigration is important to many Dutch citizens (SCP, 2016), and linking this goal with climate action might therefore offer possibilities to raise interest.

[9] It is argued that importing oil from foreign countries is against the Dutch national interest. Other countries make money out of it, which they can use to develop their own country. It is stated that investing in the own Dutch economy is would benefit this country and its citizens. This is considered as a rather right-wing argument, as main-stream media (NOS, 2017c) states that left-wing tends to have an international-solidarity, whereas right-wing politics rather has a national-solidarity.

[10] In an interview with NOS (2017a), Harm post gave several arguments that supported the transition to green energy, be emphasizing benefits for multinationals and the economy. Those statements are used to demonstrate the overall argument of the frame that addressing climate change benefits the economy.

[11] Information by *Milieudefensie* (translation: *Friends of the Earth Netherlands*) was used in order to detect the health risks of climate change (Knol, 2013). Further, it was argued that cycling more often and eating less meat would benefit our health, as well as the environment. A risk of using the "eat less meat" argument, could be sparking a counter-response, as was perceived in the study of Maibach et al. (2010, p. 9). Still, this argument is included, due to the major effect on the environment (Oppenlader, 2013), and health risks like increased of eating meat, like increased chance on coronary heart disease and diabetes mellitus (Micha, Wallace, Mozaffarian, 2010).

article, in order to avoid a priming-effect.[12] They then got the announcement that they had to read an article, followed by the article itself. Measures were undertaken to make sure they absorbed the information of the message.[13]

Afterwards, the respondent's "climate attitude" was measured. Also, respondents were asked how important they judged security, economy and health. Other aspects that were asked were religiousness, political party preference and left-right self-placement (0-100). The survey concluded by thanking respondents, offering the opportunity to win a gift-card, and attaching the researchers' contact information.

Operationalization: indicators measuring attitudes on climate change

The indicators used by McCright et al. were used to measure the climate attitude (McCright et al., 2016, 346). Participants had to indicate to what extent they agreed upon five separate statements, with options ranging between 1 (totally disagree) and 7 (totally agree). They had to choose their attitudes for the following statements: *"Human caused climate change is occurring", "Climate change is serious", "Governments, corporations, industries and citizens should contribute to fighting climate change", "I would be willing spend money, time and energy to contribute to fighting climate change", and "I support policies to reduce greenhouse gasses".* Consequently, five climate attitude indicators were created: 'acceptance of anthropogenic climate change'; 'perceived seriousness of climate change'; 'mitigation by actors'; 'personal willingness to fight climate change'; and 'support for policies to reduce greenhouse gasses', with scores ranging between 1 and 7.

The climate indicators – combining into a general climate attitude variable

In order to research the "climate attitude" in general, the five indicators were combined into a new variable (referred to as "general climate attitude"), which

---

[12] Priming is defined as the process where certain issues are made more salient than others, which influences the way in which an issue is judged (Wang, 2007, p. 124). In this context, it would mean that if the survey would include all kind of questions before reading the frame, they would probably interpret it differently than when they would immediately read the frame. More specifically, asking respondents about political preferences and other dispositions, could make them extra aware of their values and perhaps less open for new information.

[13] The announcement before the article emphasized that it was important for the sake of the research that they would read it carefully. A Qualtrics-technique was used which enabled respondents to mark words in the article, which they were told to do. This was done to make sure they would read it, and help them understand the content. Afterwards, questions were asked about to what extent they understood the article. They also had to summarize the content in one or two sentences. Results showed that those measures worked, as they understood the content very well.

consists of the mean attitudes on the five items. A reliability analysis was run to check whether the internal validity of the five variables was sufficient. The Cronbach's Alpha was 0.927, which means the reliability is very high and combining the variables is statistically justified.[14] Both the five indicators, and the general climate attitude, will be used in the analysis.

Section four: data analysis

The following hypotheses will be tested in this section:

H1: *Reading one of the national benefit pro-environment frames increases an individual's support for fighting climate change.*
H2: *Right-wing people are less supportive of fighting climate change than left-wing people.*
H3: *The effects of the frames on climate attitudes are different for people with different political ideologies: effects on right-wing people will be bigger.*

This paragraph is followed by table one, which represents relevant results of regression analyses that were run. Subsequently, H1 will be discussed by interpreting table two, which visualizes differences between climate attitudes of the frame groups. This is followed by a justification and explanation of the statistical tests, interpretation of relevant results, and conclusion. Additionally, the effect of education on climate attitudes is explained briefly. H2 and H3 will be answered similarly: visualization (table three and four), statistics, interpretation and conclusion. Supplementary, the last paragraph reports about a whether there is an interaction between importance ratings of areas (security, economy, health), and successfulness of frames about these areas.

All data of relevant regression analyses that were run are combined into table one. The first section of that table represents the effects of the dichotomous frame variables on the climate attitudes (H1). The second section shows the effect of political ideology (left-right, 0-100) on the climate indicators (H2), followed by the coefficients of the interaction variables (H3). Additionally, the effect of education on the climate attitudes is reported.

---

[14] The score on a Cronbach's Alpha test can be between 0 and 1, and should be at least 0.7 in order to combine variables into a meaningful new variable.

Table 1. Results regression analyses - effects on climate attitudes

		Item 1: Climate change is human caused	Item 2: Serious-ness problem	Item 3: Miti-gation by actors	Item 4: Willing-ness to contri-bute	Item 5: Support climate policy	Item 6: General climate attitude
Frame effects (H1)	Constant (control group) (N=36)	5.444*** (.246)	5.639*** (.267)	5.500*** (.280)	4.722*** (.243)	5.306*** (.248)	5.322*** (.226)
	Security (0/1) (N=34)	.379 (.353)	.420 (.384)	.559 (.401)	.866* (.348)	.694[+] (.356)	.584[+] (.325)
	Economy (0/1) Frame (N=34)	.232 (.353)	.302 (.384)	.676[+] (.401)	.513 (.348)	.371 (.356)	.419 (.325)
	Health (0/1) (N=33)	.253 (.356)	.361 (.386)	.318 (4.05)	.520 (.351)	.210 (.359)	.332 (.317)
Political ideology: left-right (0-100) (H2)	Constant (0= extreme left)	5.923*** (.267)	6.079*** (.291)	6.062*** (.307)	5.864*** (.261)	6.028*** (.271)	5.991*** (.246)
	Left-Right ideology (0-100)	-.006 (.005)	-.004 (.006)	-.004 (.006)	-.015** (.005)	-.009[+] (.005)	-.008 (.005)
Interaction effect effects frames and political ideology (H3)	Constant	5.853*** (.518)	5.775*** (.566)	5.968*** (.590)	5.054*** (.496)	5.442*** (.520)	5.619*** (.475)
	Security Frame	.506 (.727)	.631 (.794)	.434 (.829)	1.096 (.696)	1.018 (.730)	.737 (.668)
	Economy Frame	-.260 (.768)	.250 (.839)	.087 (.876)	1.388[+] (.736)	.896 (.771)	.472 (.705)
	Health frame	-.131 (.799)	.218 (.873)	-.258 (.911)	.813 (.765)	.497 (.802)	.228 (.733)
	Political Ideology (0-100)	-.009 (.010)	-.003 (.011)	-.010 (.011)	-.007 (.009)	-.003 (.010)	-.006 (.009)
	Security* Ideology(0-100)	-.003 (.014)	-.005 (.015)	.002 (.016)	-.006 (.013)	-.008 (.014)	-.004 (.013)
	Economy* Ideology(0-100)	.011 (.014)	.001 (.016)	.013 (.016)	-.018 (.014)	-.011 (.015)	-.001 (.013)
	Health* Ideology(0-100)	.008 (.017)	.003 (.018)	.013 (.019)	-.008 (.016)	-.007 (.017)	.002 (.015)
Effect of education (0=low, 1=high)	Constant (low education level)	5.174*** (.304)	5.261*** (.328)	5.391*** (.349)	4.478*** (.301)	5.261*** (.311)	5.113*** (.280)
	High level of education	.580[+] (.333)	.774* (.360)	.591 (.382)	.855* (.330)	.432 (.341)	.647* (.307)

Note: [+]p<.10; *p<.05; **p<.01; ***p<.001

By T. E. Bary (s1585215)
Supervisor: Dr. M. F. Meffert

H1 - *Visualization of differences in climate attitudes between frame groups*

It was expected that giving Dutch people a national interest frame, would increase their climate attitudes. Table two compares mean scores on the six climate attitude indicators, between the four frame groups. Results show that respondents are generally rather aware of climate change, and willing to fight it.[15] Nevertheless, the control group has the lowest support for each item. This suggests that the expectation is met, as receiving a national benefit frame generally results in more awareness and concern about anthropogenic global warming, as well as support for mitigation and willingness to contribute to this.

Table 2. Comparison climate attitudes of the four frame groups

---
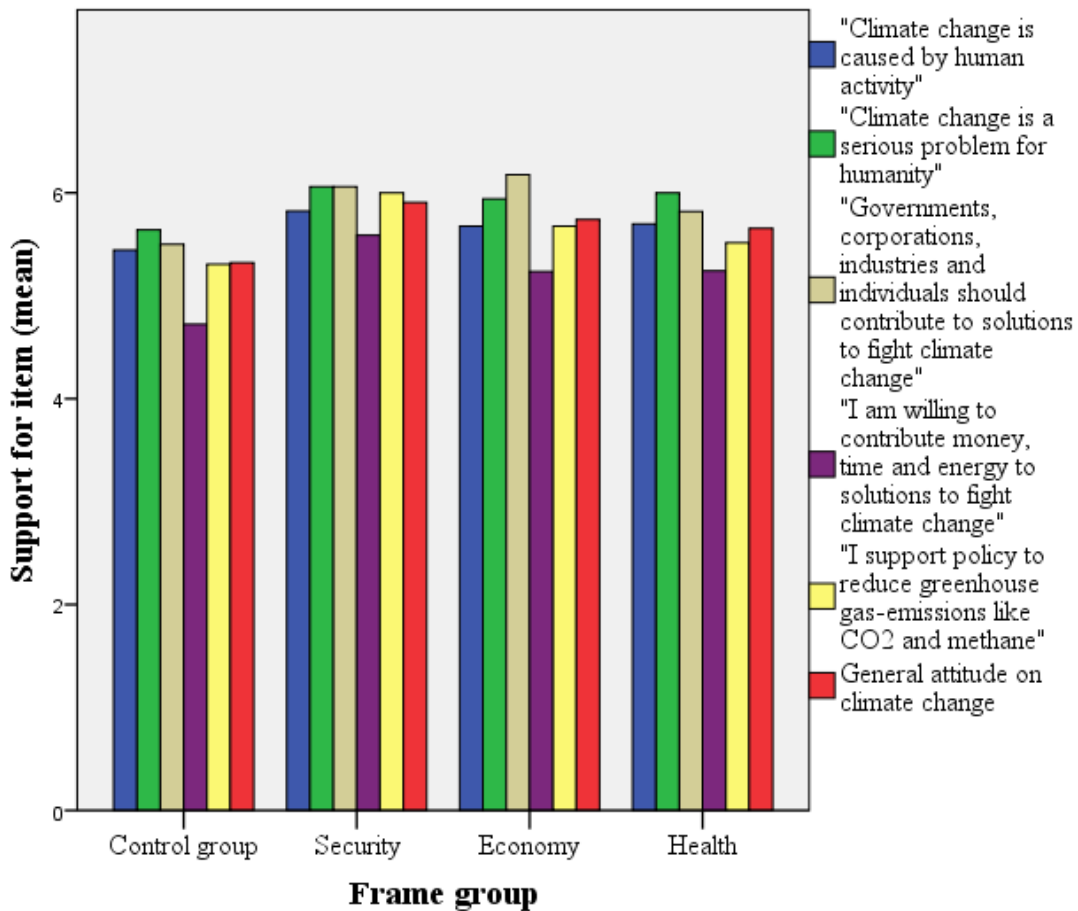
[15] All means are higher than 5 ("rather agree"), except for the score of the control group on their willingness to contribute to fighting climate change, which was 4.72. It should be kept in mind that general results are influenced by the nature of the social network of the researcher.

H1 - Differences in attitudes between frame-groups: statistical test

For this research, regression analyses were used to find effects of independent variables on a dependent scale variable. In order to test H1, it was investigated whether the six climate attitudes of the groups differed in a significant way (first section of table 1). The three frame groups are dichotomous dummy variables, and unstandardized coefficients (B, Std. Error) show how much should be added to the constant (control group's mean attitude), to get the mean climate attitude of that particular frame group. This test was run for each different climate attitude measure separately. Relations are considered as statistically significant if p>.05.[16]

H1 - Interpretation results

For all indicators, the constant shows the control group's mean support for the item. As all unstandardized regression coefficients are positive, receiving a frame consistently increases a person's climate attitude. Most effects are not statistically significant, which is not surprising.[17] Although there are no statistically significant impacts on indicator one and two, coefficients suggest that the sequence of successfulness of frames is: security, economy, health. This is different for the suggested sequences of indicator three (economy, security, health), four (security, health, economy), and five and six (security, economy, health). One coefficient is statically significant: the effect of the security frame on an individual's willingness to contribute money, time and energy to fighting climate change (B=.866, p=.014). Three other relations have chance between 5% and 10% to take place by coincidence: the effect of the economy frame on perceived need for actors to mitigate (B=.676, p=.094), the effect of the security frame on support for climate policy (B=.694, p=.053) and on the general climate attitude (B=.584, p=.074).

Conclusion H1: "National benefit frame increases engagement climate change"

All positive B's in the first six tables of this section indicate that the frames consistently increase the climate attitude. However, most effects are not significant,

---

[16] If the level of significance is below .05, the chance that the relation occurs coincidentally is below 5%, and it is statistically accepted that the relationship takes place.

[17] This is likely to be due to the limited sample size, which results in a too big chance that the causal relation might occur coincidentally. An outcome that is not significant is very likely with a relatively small N like in this research. Furthermore, the social network of the researcher is likely to be more engaged with the issue of climate change than the national Dutch population, which means that average attitudes are potentially relatively high, and there is less room for increase on attitudes.

except for the effect of the security article on person's willingness to contribute to fighting climate change. This effect proofs that the national security article has the potential to engage people with the issue. It successfully mobilizes people to act in a more sustainable way, or at least increases their intention to do so. Their support for the item on a 1-7 scale increases with almost one, after reading the security article.

Generally, the security article is most successful, followed by economy and health. However, when distinguishing for the five indicators, it was clear that the sequence of successfulness differs. This suggests that, while attempting to influence public opinion on climate change, there should be a clear goal about what exactly one wants to influence, because different frames work to influence different aspects of climate attitude.

Additional: Effect of education on a person's climate attitude

Additionally, regression analyses were run to investigate whether other characteristics, gender, religion, age and education, influenced a person's climate attitude. None of the relations were strong or significant, except for the dichotomous variable level of education.[18]

H2 – "Right-wing is less pro-climate": visualization

The second hypothesis states that right-wing people are generally less engaged with the issue of climate change, and therefore score lower on the indicators. A 100-point scale measured the left-right self-placement (0-49= left-wing, N=76; 50=center, N=14; 51-100= right-wing, N=49). Table three compares average attitudes of those three political groups, on each indicator.[19]

---

[18] A higher education results in a more support for climate change action. For the general climate attitude, this effect is statistically significant (p=0.037). The constant, so the mean attitude for people with a low education, is 5.113. If a person has a high education, the average increase in a person's attitude is 0.647. Other two statistically significant effects are the impact of high education on a person's willingness to contribute to fighting climate change (B=.855, p=.011) and on their perceived seriousness of the problem (B=.774, p=.033). The results are included at the end of table one.

[19] This variable was only used to visualize the data in table 3 and table 4. For the rest of the research, the 0-100 scale variable political ideology was used, because otherwise information would be lost.

Table 3. Effect of political ideology on climate attitudes
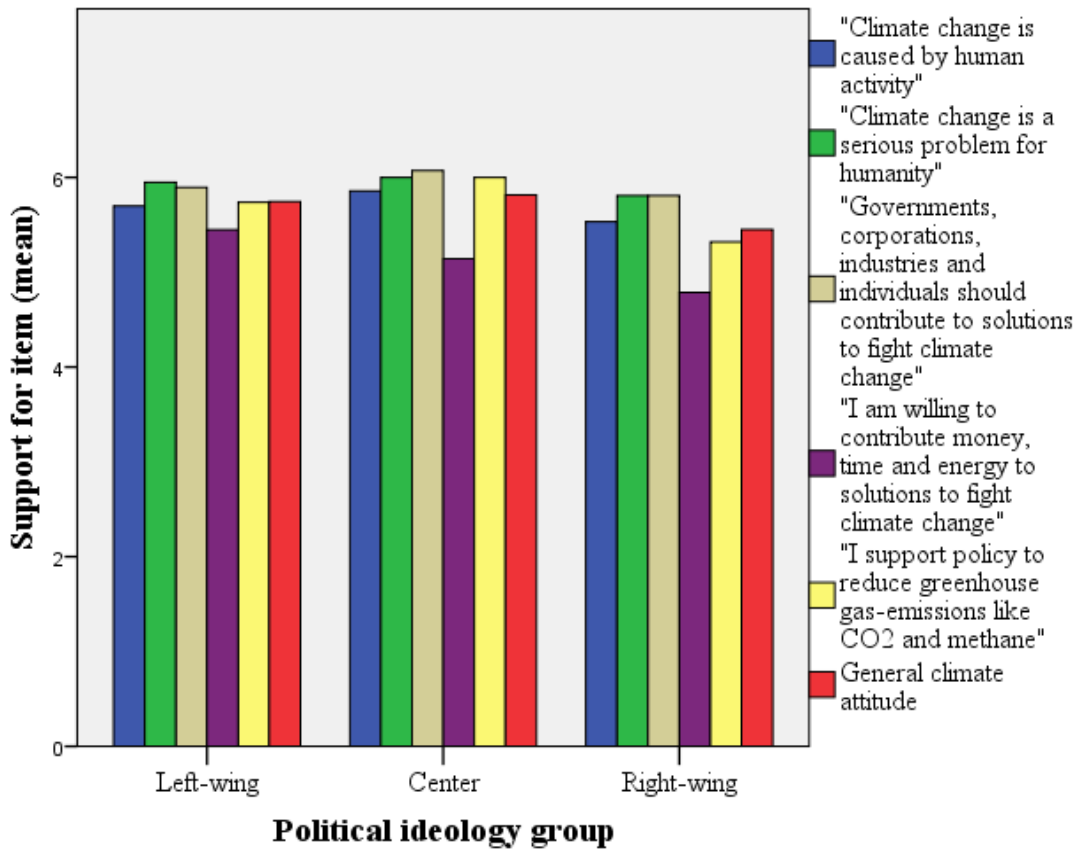
H2 – Statistics, interpretation and conclusion

To investigate whether the effect of political ideology on a person's climate attitude was statistically significant, the scale-variable (0-100, extreme left-extreme right) was used as an independent variable in a regression analysis. The coefficients for each indicator are negative, suggesting that the more right-wing a person is, the less likely the person is to care about climate change.

Almost none of these relations were significant.[20] However, there is one exception: an individual's willingness to contribute money, time and energy to fighting climate change decreases significantly (B=.015, p=0.004) as a person has a more right-wing self-placement. Theoretically, an extreme-right person (=100), would score 1.5 points lower on the 7-point indicator than an extreme left-wing person (=0).

---

[20] The p's for indicator one to six were respectively p=.261, p=.501, p=.510, p=.004, p=.091, p=.120. This shows that there are big differences between the chances that political ideology has an effect on a certain aspect (indicator) that represents the climate attitude. The chance that the effect of the security article impacts the willingness to contribute is 99,6%. This is a big difference with the p's on the other indicators. This reaffirms the notion that there are different aspects of the climate attitude, and distinguishing between them is important.

Another effect, relatively close to statistically significant, is between political ideology and support for climate policy (B=.009, p=.091).

The hypothesis was that, compared with left-wing, right-wing people score lower on the climate attitude indicators. Results found some evidence for this, since right-wing people are less willing to personally contribute to fighting climate change.

H3 - Visualizing different frame-effects per political ideology group

The main expectation of H3 was that frames would have different effects on people with different ideologies. Specifically, the frames were expected to spark a bigger increase in climate attitude amongst right-wing people. Table four visualizes the effects of frames on the general climate attitude, while distinguishing between the three ideology groups. A comparison of the means shows that the right-wing group consistently has a lower general climate attitude than the left-wing group.[21] Per political group, distances between the four frame group's means are not entirely the same, suggesting that frames might not have the same effect on each political ideology group. An interaction effect would mean that the effect of a frame on an attitude is not the same for each political ideology, and vice versa.[22]

---

[21] In order to calculate the mean general climate attitudes for each frame group, while distinguishing between the three ideology groups, twelve new variables were created. Those dichotomous dummy variables represented the cases that were in a particular frame group and ideology group. The mean scores of those groups and their N's were as follows. Control group: left-wing (mean=5.529, N=17), center (mean=5.120, N=5) and right-wing (mean=5.143, N=14). Security group: left-wing (mean=5.970, N=20), center (mean=6.267, N=3) and right-wing (mean=5.691, N=11). Economy group: left-wing (mean=5.706, N=17), center (mean=6.333, N=3) and right-wing (mean=5.657, N=14). Heath group: left-wing (mean=5.736, N=22), center (mean=6.000, N=3) and right-wing (mean=5.300, N=8). The mean of the total sample (N=137) is 5.651.

[22] To illustrate what an interaction effect would mean, three examples of potential interaction effects are discussed briefly (based on interpreting table four). Firstly, the health article is on average slightly more persuasive than the economy article for left-wing people, while the center- and right-wing group is more convinced by the economy- article than the health article. Secondly, while comparing between ideology groups, the center-group has the biggest difference between the control group's score, and the frame groups. This suggests that the frames have a bigger impact on the attitude of someone with a center ideology. It should be noted however, that the center group consists only of 14 persons, 5 were in the control group, and 3 in each of the frame groups. This makes the chance that this effect is taking place per coincidence very high. Thirdly, when reviewing the left-wing group in the plot, the difference in attitude between the control- and economy group is not at all as big as within the right-wing group. This is an indication that the economy article might work better to persuade right-wing people.

Table 4. Different effects of frames for political ideology groups
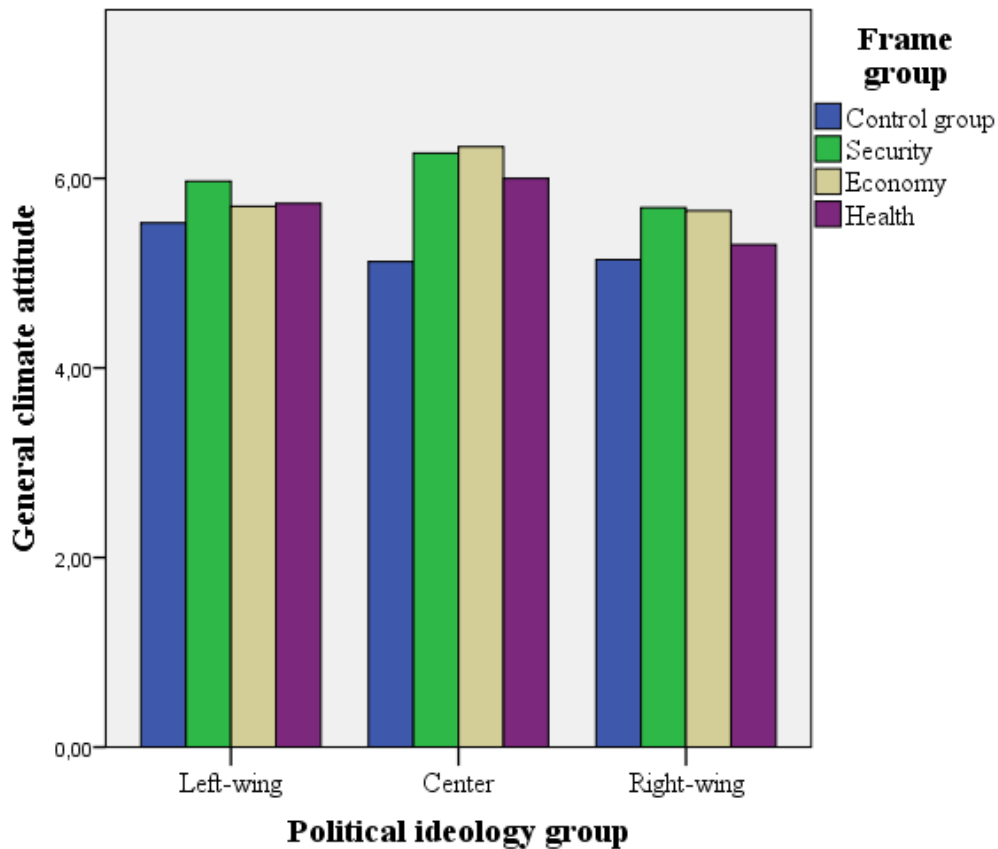
H3 - Statistical test to research differences in frame-effects between different ideologies

To answer H3, political ideology (0-100) was used as a control variable in the regression analysis. In a regression model with solely the frames as independent variables, it is assumed that the effect of the frames are the same for people with different ideologies. As this is expected not to be the case, political ideology is included as a control variable. In general, including a control variable could have an additive effect, quantitative interaction effect (only magnitude of relation differs) or a qualitative interaction effect (both the magnitude and direction of effect differ).[23] To

---

[23] In general, if a third variable is included in a model to research whether a relationship changes after correcting for it, certain findings are possible. Firstly, an additive effect could occur. For example (fictional), if for the climate attitude of a left-wing person would increase from 5 to 6 after having read the security article, while for a right-wing person the increase would be from 4 to 5. In that case, using the third variable political ideology does not change the magnitude neither the direction of the relation between frame and attitude. However, if an interaction effect would take place, including the variable political ideology would show that the increase sparked by the frame differs as political ideology differs. Two types of interaction effects could occur: quantitative or qualitative. Quantitative means that the magnitude of the relationship differs, but the direction, either positive or negative, stays the same. (A fictional example would be that the economy frame increases a left-wing person's position with .6, while it would increase a right-wing person's attitude with 1.) A qualitative interaction means that not only the magnitude is different, but also the direction differs, if the interaction variable is

By T. E. Bary (s1585215)   27
Supervisor: Dr. M. F. Meffert

conduct this regression analysis, three new interaction variables were created (multipliers of each separate dummy and political ideology scale), with scores between 0 and 100. The regression was run for each of the six climate indicators, including seven independent variables: dummy variables of the three frames; the political ideology scale; and the three interaction variables.

H3 – Interpretation results

The third section of table one includes the unstandardized coefficient per interaction variable, which represents the effect of political ideology within that particular frame group. None of the coefficients are significant, which means that this research does not find support the expectation that the effects of the frames differ per political ideology (H3). Chances are high that the effects (coefficients) are taking place coincidentally.[24] Still, an interpretation will follow, to analyze results and explore potential effects that might serve as inspiration for future research.

Per climate item, the three interaction-coefficients should be compared, while keeping in mind the results from both section one (effects of frames on support) and two (effects of political ideology on support).[25] If the coefficient of an interaction variable is negative, this indicates that the frame works better to persuade left wing people for the item. An example is the coefficient of Security*Ideology on item one (B=-.003), which would theoretically mean that within the security group, an extreme left-wing person (ideology=0) would have an attitude of 5.853 (constant), while an extreme right-wing person (ideology=100) would have an attitude of 5.553 (constant-.300). If a coefficient is positive, this indicates that the frame is more successful in increasing a right-wing person's attitude. For instance, the effect of Economy*Ideology on item one (B=.011) suggests that within the economy group, an

---

included in the analysis. (Imaginary, this would be the case if the health article would decrease the attitude of a right-wing person from 5 to 4.5, while it would increase the attitude of a left-wing person from 5 to 6.)

[24] This research works with N=137, which is actually insufficient to effectively investigate the effect of a control variable like was done in this analysis. For the N's per political group per frame, see footnote 22. Due to the limited sample size, it is not surprising that no significant interaction effects were found.

[25] It gives insight to compare the coefficients of political ideology on a climate indicator (in section two of the table) with the coefficients of the interaction variables. This shows in which way the effect of ideology on support for the item is changed, if a person is part of a particular frame group. While doing this, comparisons suggest that, if the three frame dummies are perceived as interaction variables, qualitative interaction effects might take place, since the direction of the relationship changes in some cases after including the frames to the analysis. However, these effects are not significant, and this research regards political ideology as the control variable for the effects of frames, instead of the other way around.

extreme left-wing person would score 5.853, while an extreme right-wing person would score 6.900.[26]

The coefficients for indicator one (Security*Ideology: -.003, Ideology*Economy: .011, Health*Ideology: .008) suggest that the security article works best for left-wing people, while economy, followed by health, work better for right-wing people. The B's for the second indicator (-.005, .001, .003) suggest that security is more successful amongst left-wing, while health and economy are more persuasive for right-wing. The three coefficients on indicator three (.002, .013, .013) suggest that all frames (especially economy and health) work better to convince right-wing people of the necessity for actors to engage in mitigation. On the contrary, coefficients on both indicator four (-.006, -.018, -.008) and five (-.008, -.011, -.007) suggest that all frames, especially economy, work better to increase mobilization and support amongst left-wing people. The coefficients for the general climate attitude (-.004, -.001, .002) suggest that overall, the security and economy frame work better for left-wing people, while the health frame works better for right-wing people.

Conclusion H3: "Effects of frames differ per political ideology"

The third hypothesis was that frame effects are influenced by political ideology, and that right-wing people's attitudes would increase more. Table three suggested that including political ideology as control variable could alter the effects of frames on climate attitudes. However, the regression analyses with interaction variables included did not show any significant results. Still, the directions did suggest that some messages work better to engage left- or right-wing people. For example, in the section about H1 ("receiving a frame increases the climate attitude"), it was concluded that the sequence of successful frames was: security, economy, health. This changed after including the interaction variable. Generally, the health article works best to increase a right-wing person's general climate attitude, which is in line with the expected direction of the interaction effect. On the contrary, the security-, followed by economy frame, work better to increase a left-wing person's attitude. Distinguishing between ideologies gave further insights and nuances.

The conclusion on H1 argued that different frames are likely to influence

---

[26] This seems very high, but it should be kept in mind that this is purely theoretical. Not many respondents were extreme right-wing, the B shows the slope of the graph, and this effect is not significant.

different aspects of public climate attitude. Although none of the results for H3 are statistically significant, directions of coefficients reaffirm this notion. For indicator four and five, all frames worked better for left-wing, while for indicator three, they all worked better for right-wing. This shows that it matters what indicators are used to measure the climate attitude, as coefficients for item four and five show the exact opposite of what was expected, while results for item three are in line with the expectation that frames work better to influence right-wing people. For the other indicators, particular messages worked better for each political ideology. This shows that although "general climate attitude" is a very reliable combined variable, distinguishing between different aspects of climate attitude is useful.

Additional: Interaction between concern for frame's area and effect of frame

Additionally, it was tested whether there was an interaction effect between the perceived importance of an area (security, economy, health), and the successfulness of a frame about that particular area. It was expected that the more important a person perceives an issue, the more successful the frame about that area would be, in increasing that person's climate attitude.

The structure of investigating this is similar to testing H3. The perceived importance (1=very important, 7=very unimportant) functioned as control variable. Six regression analyses (with the six climate attitude items as DV's) were run for each of the frame areas. For example for security, the IV's were: the dummy frame variables, perceived importance security, SecurityDummy*ImportanceSecurity, EconomyDummy*ImportanceSecurity, HealthDummy*Importancehealth. It was expected that the coefficient of the interaction variable SecurityDummy*ImportanceSecurity would be negative and statistically significant, which would mean that a person who has read the frame and perceives security as very important, would score higher on the climate attitude item than a person who reads the frame and perceives the security as less important. However, none of the 18 regression analyses showed a statistically significant effect, and often the expected directions were not present either.[27] Therefore, results of these tests do not provide

---

[27] To maintain the focus of this research, results were not included in table one. As said, no statistically significant interaction effects were found. Besides the limited sample size, the absence of much variation in how important people perceived issues, contribute to a lower chance on statistically significant results. Nevertheless, both the perceived importance of health and security, turned out to have a statistically significant effect on a person's climate attitude. In order to investigate those effects

support for the expectation that frames work better if persons rate the area of the frame as particularly important.

Section five: Conclusion

The broader relevance for this research is the global problem of climate change, the inaccurate public perception of the issue, and the political controversy around it. Generally, left-wing people show more support for fighting climate change than right-wing people. The attempt of this research was to overcome that gap, and increase public engagement with the issue, by means of climate change communication. More specifically, three climate change frames that emphasized areas Dutch people care about, where tested in an experimental survey setting.

The first hypothesis was that national benefit pro-environment frames (security, economy, health) would increase public concern about climate change. Although most coefficients were not significant, directions showed that frames consistently increased support for the climate attitude indicators. Moreover, the research found a statistically significant effect: reading the security frame of climate change increased the individual willingness to contribute money, time and effort to fight climate change, with almost 1 at a 0-7 scale (B=0.866, p=.004). This shows that the security message has the potential to mobilize people to change their individual behavior, to act in a more sustainable way. Further, the sequence of effective frames on general climate attitude was: security, economy, health.

The second hypothesis was that right-wing people are initially less supportive of action to fight climate change than left-wing people. The consistent negative coefficients indicated that this is indeed the case. Moreover, the statistically significant effect of political ideology on a person's willingness to contribute money,

---

separately, regression analyses were run with the three variables about perceived importance of the issues (1-7) as independent variables, and general climate attitude as dependent variable. The effect of perceived importance of national security on the general climate attitude (item six) (B=.607, p=.001) showed that the less a person cares about national security, the more the person cares about the environment. The opposite counts for health, the less someone cares about health, the lower the score is on the general climate attitude (B=-.360, p=.043). (Note: as a person increases on the 1-7 perceived importance scale, the concern with the frame area decreases). These outcomes are remarkable and should be topic of future research. Additionally, it was investigated whether there was an interaction effect between the position on the left-right (0-100) scale, and the perceived importance of an issue. This was done for each of the three areas, with general climate attitude as DV, and perceived importance, political ideology, perceived importance*ideology, being IV's. No statistically significant results were found, so it does not proof that the effect of perceived importance on a person's climate attitude, is influenced by a person's left-right placement.

time and effort to fighting climate change (B=.015, p=0.004) offers some evidence for H2.

The third hypothesis was that the effect of the messages differed per political ideology, and right-wing would generally experience more growth in climate attitudes. Although the bar chart (table four) indicated that an interaction effect might be present, no statistically significant results were found to support H3. Nevertheless, magnitude and directions of the interaction variables' coefficients indicated there could be differences in what kind of frames influence what kind of people. Generally, the health frame worked better to spark an increase in a right-wing person's attitude, but the opposite applies for the security and economy frame. However, distinguishing between indicators suggested that all frames were more successful in making right-wing persons believe that governments, corporations, industries and individuals should do more to increase climate change.

As the theoretical background section showed, this research was built on work of many academics in the field of climate change communication. The most important contribution of this research is the security frame's effect on a person's willingness to contribute. Results of this research bring up many relevant areas for future research. Detailed research could explore which particular security-frame aspects motivate people to change their behavior. Further, the frames should be tested in different environments and countries. With regards to the Netherlands, a national representative sample would overcome the limitation of N (size and diversity) of this research. In case the positive increase would stay (or be even bigger), far-reaching societal effects could be sparkled, regarding sustainability. Academics should further investigate which frames are successful for which ideology-groups. This research gives the impression that particular frames are more successful for particular political worldviews. A sophisticated use of frames is necessary in order to be individually effective.

The relevance of this research area goes beyond academics. In order for politicians and policymakers to understand the dynamics of public viewpoints towards climate change, knowledge about the different effects of climate frames on people with different ideologies is utmost relevant. Not only on the national level (decreasing the citizens-politics gap), also on the international level. Especially in the current political landscape, with an American President stepping out of the Paris Climate Agreements, effective international steps are more essential than ever.

By T. E. Bary (s1585215)
Supervisor: Dr. M. F. Meffert

Knowledge about creating public engagement with climate change could contribute to international agreement. It could enable future world leaders to spark international change, by creating blueprints to get the public to fight climate change. Here, this research attempts to serve as an inspiration, by illustrating how people can be stimulated to contribute money, time and effort to addressing the global challenge of climate change.

References (APA-style)

Andeweg, R. B. and Irwin, G. A. (2014). Governance and Politics of the Netherlands. Fourth Edition. Palgrave MacMillian.

Bain, P.G., Milfont, T.L., Kashihisa, Y., Bilewicz, M., Doron, G., Garðarsdóttir, R. B., . . . & Saviolidis, N. M. (2015). How the co-benefits of addressing climate change can motivate action across the world. *Nature Climate Change, 6*, 154-157.

Barnes, H. (2013, September 2). How many climate migrants will there be? BBC News. Retrieved from: http://www.bbc.com/news/magazine-23899195.

Boano, C., Zetter, R. and Morris, T. (2008) Environmentally displaced people: Understanding the linkages between environmental change, livelihoods and forced migration. Refugee Studies Centre. University of Oxford, 1-44.

Brody, S.D., Zahran, S. & Himansu, A. V (2008). Examining the Relationship Between Physical Vulnerability and Public Perceptions of Global Climate Change in the United States. *Environment and Behavior*, *40*(1), 72-95.

Capstick, S., Whitmarsh, L, Poortinga, W., Pidgeon, N. and Upham, P. (2015). International trends in public perceptions of climate change over the past quarter century' *WIREs Climate Change, 6*, 35-61.

Chirubolo, A. and Leone, L. (2010). Personality and politics: The role of the HEXACO model of personality in predicting ideology and voting. *Personality and Individual Differences, 49*(1), 43-48.

Chong, D. and Druckman, J. N. (2007). Framing Theory. An*nual Review of Political Science, 10*, 103-125.

Connor, P. et al (2016). Interpersonal Communication about Climate Change: How Messages Change when Communicated through Simulated Online Social Networks. *Climate Change, 136,* 463-476.

Egan, P. J. and Mullin, M. (2017). Climate Change: US Public Opinion. *Annual Review of Political Science, 20,* 1-18.

Hagen, B., Middel, A. and Pijawka, D. (2016). European Climate Change Perceptions: Public support for mitigation and adaptation policies. *Environmental Policy and Governance, 26*, 170-183.

Hart P.S. and Nisbet E.C. (2012). Boomerang effects in science communication: how motivated reasoning and identity cues amplify opinion polarization about climate mitigation policies. *Communucation Research, 39*(6), 701–723.

Hamilton, L. C. and Saito, K. (2015). A four-party view of US environmental concern. *Environmental Politics, 24*(2), 212-227.

Hardisty, D. J., Johnson, E. J. and Weber, E. U. (2010). A Dirty Word or a Dirty World? Attribute Framing, Political Affiliation, and Query Theory. *Psychological Science, 21*(1), 86–92.

Hmielowski, J.D., Feldman, L., Myers, T.A., Leiserowitz, A. & Maibach, E. (2014) An attack on science? Media use, thrust in scientists, and perceptions of global warming. *Public Understanding of Science, 23*(7), 866-883.

Hsiang, M.S., Burke, M. & Miguel, M. (2013). Quantifying the Influence of Climate on Human Conflict. *Science, 341.*

Imbeau, L. M., Pétry, F. & Lamari, M. (2001). Left-right party ideology and government policies: A meta-analysis. *European Journal of Political Research, 40*, 1-28.

Jahn, D. (2010). Conceptualizing Left and Right in comparative politics: Towards a deductive approach. *Party Politics, 17*(6), 745-765.

Kim, S. Y. and Wolinksy-Nahmias, Y. (2014). Cross-National Public Opinion on Climate Change: The Effects of Affluence and Vulnerability. *Global Environmental PoliticsVolume, 14*(1), 79-106.

Klein, N. (2014). *This Changes Everything. Capitalism vs. The Climate*. Simon & Schuster.

Knol, A. (2014). Luchtvervuiling en de gevolgen voor onze gezondheid. Informatieblad Samen voor gezonde lucht. *Milieudefensie - friends of the Earth Netherlands*. Retrieved from: milieudefensie.nl/publicaties/factsheets/informatieblad-luchtvervuiling-en-de-gevolgen-voor-onze-gezondheid.

Kvaløy, B., Finseraas, H. & Listhaug, O. (2012). The public's concern for global warming: A cross-national study of 47 countries. *Journal of Peace Research, 49*(1), 11-22.

Lecheler, S. and de Vreese, C. H. (2012). News Framing and Public Opinion: A Mediation Analysis of Framing Effects on Political Attitudes. *Journalism & Mass Communication Quarterly, 89*(2), 185–204.

Leiserowitz, A., Maibach, E., Roser-Renouf, C., Feinberg, G., Rosenthal, S. and Marlon, J. (2014). *Climate Change in the American Mind: Americans' Global Warming Beliefs and Attitudes in November, 2013.* Yale Project on Climate Change Communication. New Haven, CT: Retrieved from: http://www.climatechangecommunication.org/ sites/default/files/reports/Climate-Beliefs-November-2013.pdf.

Li, N., Hilgard, J., Scheufele, D.A. et al. (2016). Cross-pressuring conservative Catholics? Effects of Pope Francis' encyclical on the U.S. public opinion on climate change. *Climate Change, 169*(3), 367-380.

Lorenzoni, I. & Pidgeon, N.F. (2006). Public Views on Climate Change: European and USA Perspectives. *Climatic Change*, *77*, 73-95.

Maibach, E. W., Myers, T. A., Leiserowitz, A. A (2014). Climate scientists need to set the record straight: There is a scientific consensus that human-caused climate change is happening'. *Earth's Future*, *2*(5), 295–298.

Maibach, E.W., Nisbet, M., Baldwin, P., Akerlof, K. & Diao, G. (2010). Reframing climate change as a public health issue: an exploratory study of public reactions. *BMC Public Health, 10*(299).

McCright, A.M., Dunlap, R.E., Marquart-Pyatt, S.T. (2016). Political ideology and views about climate change in the European Union. *Environmental Politics, 25*(2), 338-358.

McKibben, B. (2012). Do the math. *Rolling Stone Magazine*, *August*. Retrieved from: http://www.nm-ipl.org/wp-content/uploads/2015/08/Do-the-math-plus-table.pdf.

Micha, R., Wallace, S. K. and Mozaffarian, D. (2010). Red and Processed Meat Consumption and Risk of Incident Coronary Heart Disease, Stroke, and Diabetes Mellitus: A Systematic Review and Meta-Analysis. *Circulation, 121*, 2271-2283.

Ministry of Defense (2016, December 5). Speech by Netherlands Chief of Defense, General T.A. Middendorp, on the occasion of the Planetary Security Initiative in The Hague on 5 December 2016. Retrieved from:

https://www.defensie.nl/downloads/toespraken/2016/12/05/speech-by-netherlands-chief-of-defence-general-t.a.-middendorp-on-the-occasion-of-the-planetary-security-initiative-in-the-hague-on-5-december-2016.

Moerman, T. (2017, January 24). Dit willen Nederlandse politieke partijen met immigratie en vluchtelingenopvang. *Business Insider Nederland*. Retrieved from: www.businessinsider.nl/verkiezingen-2017-immigratie-vluchtelingen-asiel/.

Mommers, J. (2017, March 13). Dit zijn de partijen die klimaatverandering serieus tegengaan. *De Correspondent*. Retrieved from: decorrespondent.nl/6353/dit-zijn-de-partijen-die-klimaatverandering-serieus-tegengaan/1895115426732-be6e8ec4.

Myers, T. A., Nisbet, M. C., Maibach, E. W. & Leiserowitz, A. A. (2012). A public health frame arouses hopeful emotions about climate change. *Climate Change, 113*, 1105-1112.

Neslen, A. (2017, March 28). Only Sweden, Germany and France among EU are pursuing Paris climate goals, says study. *TheGuardian*. Retrieved from: www.theguardian.com/environment/2017/mar/28/only-sweden-germany-france-pursuing-paris-climate-goals-study.

Nisbet, M. C. (2009). Communicating Climate Change: Why Frames Matter for Public Engagement. *Environment: Science and Policy for Sustainable Development*, *51*(2), 12-23.

Norsk Senter for Forskningsdata (n.d.). *Netherlands - Political parties*. Accessed at June 9, 2017. Retrieved from: www.nsd.uib.no/european_election_database/country/netherlands/parties.html.

NOS (2016, September 5). Video: 'Klimaatverandering en vluchtelingen | NOS op 3'. Retrieved from: https://www.youtube.com/watch?v=HxKbKcPefRU&feature=youtu.be.

NOS (2017a, April 17). Bedrijven willen zekerheid van het nieuwe kabinet over vergroening. Retrieved from: http://nos.nl/artikel/2168757-bedrijven-willen-zekerheid-van-het-nieuwe-kabinet-over-vergroening.html.

NOS (2017b, March 16). TK17: bekijk de uitslagen (per gemeente) en vorm je eigen coalitie. Retrieved from: nos.nl/artikel/2163332-tk17-bekijk-de-uitslagen-per-gemeente-en-vorm-je-eigen-coalitie.html.

NOS (2017c, March 9). Politiek gaat altijd over links en rechts. Maar bestaat dat nog wel? Retrieved from: http://nos.nl/op3/artikel/2162205-politiek-gaat-altijd-over-links-en-rechts-maar-bestaat-dat-nog-wel.html

Oppenlander, R. A. (2013). *Less meat, and taking baby steps won't work.* Minneapolis, MN: Langdon Street.

Postma, R. & Luttikhuis, P. (2017, February 16). Groot contrast tussen partijen op milieugebied. *NRC*. Retrieved from: www.nrc.nl/nieuws/2017/02/16/groot-contrast-tussen-partijen-op-milieugebied-6722781-a1546275.

Raleigh, C. and Urdal, H. (2007). Climate change, environmental degradation and armed conflict, *Elsevier, 26*(6), 674-694.

Schäfer, M. S. (2012). Online Communication on Climate Change and Climate Politics: a Literature Review. *WIREs Climate Change*, *3*, 527–543.

Smith, D. & Vivenkananda, J. (2007). A Climate of Conflict: The Links Between climate change, peace and war. *International Alert*, 1-46. Retrieved from: ftp://ftp.cs.ru.nl/pub/toinesmits/PDF_files_supporting_literature_24%2625-11-2009/2007SmithA%20climate%20of%20conflict.%20The.pdf.

Sociaal en Cultureel Planbureau [SCP] (2016). Burgerperspectieven 2016/4. *Onderzoek Burgerperspectieven Continu.* 1-56. Retrieved from: https://www.scp.nl/Publicaties/Alle_publicaties/Publicaties_2016/Burgerperspectieven_2016_4.

Trouw (2017, April 24). Brief 90 hoogleraren: 'Maak Nederland koploper in de nieuwe, groene economie' *Trouw*. Retrieved from: https://www.trouw.nl/groen/brief-90-hoogleraren-maak-nederland-koploper-in-de-nieuwe-groene-economie-~ae9eec2d/.

United Nations, Intergovernmental Panel on Climate Change [IPCC] (2014). *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.* New York: Cambridge University Press.

United Nations, United Nations High Commissioner for Refugees (2015). *UNHCR: the Environment & Climate Change.* Retrieved from: http://www.unhcr.org/540854f49.

Van den Broeke, M. R., Enderlin, E. M., Howat, I. M., Munneke, P. K., Noël, B. P. Y., van de Berg, W. J., van meijgaard, E. & Wouters, B. (2016). On the recent

contribution of the Greenland ice sheet to sea level change. *The Cryosphere, EGU, 10,* 1933-1946.

van Slooten, B. (2017, April 29). Brexit-onderhandelingen: hard of zacht, that's the question. *NOS*. Retrieved from: nos.nl/artikel/2170655-brexit-onderhandelingen-hard-of-zacht-that-s-the-question.html

Wheeler, S. M. and Beatley, T. (2014). *Sustainable Urban Development Reader. Third Edition*. London and New York: Routledge.

Whitmarsh, L. (2008). Are flood victims more concerned about climate change than other people? The role of direct experience in risk perception and behavioral response. *Journal of Risk Research, 11*(3), 351-374.

Wolbers, M. H.J. & Ultee, W. C. (2013). Driegeneraties- en tweeoudersvragen over het opleidingsniveau van mannen en vrouwen in Nederland. *Mens en maatschappij, 88*(3), 276-299.

World Bank (2012). Turn Down the Heat: Why a 4°C Warmer World Must be Avoided. *Potsdam Institute for Climate Impact Research and Climate Analytics*. Report Commissioned by the World Bank.

Zhou J. (2016). Boomerangs versus javelins: how polarization constrains communication on climate change. *Environmental Politics, 25,* 788–811.

Appendix A : full survey text

(Numbers of questions might seem illogical but do not affect the sequence as is presented in this appendix)

Titel: Enquêteonderzoek scriptie

Q1 Welkom, hartelijk dank voor het meewerken aan dit scriptie-onderzoek. Deze korte enquête (+/- 5 min.) bevat enkele vragen over u als persoon, maar zal volledig anoniem worden behandeld. Indien u kans wilt maken op een van de vier bol.com gift-cards, kunt u later uw e-mail adres invullen. Ook dan wordt strikt vertrouwelijk omgegaan met deze informatie. Het onderzoek wordt uitgevoerd door Tara Bary.

Q2 Wat is uw geslacht?
❍ Man (1)
❍ Vrouw (2)

Q4 Wat is uw leeftijd? (in jaren)

Q5 Wat is uw woonplaats?

Q7 Wat is uw hoogst gevolgde opleiding? (Geldt ook voor opleidingen die u nog niet heeft afgerond maar wel van plan bent af te ronden)
- ○ Basisschool (1)
- ○ vmbo (2)
- ○ havo (3)
- ○ vwo of gymnasium (4)
- ○ mbo (5)
- ○ hbo (6)
- ○ universitair (7)
- ○ post-acedemisch (8)

Q6 Op de volgende pagina krijgt u een nieuwsartikel te lezen. Deze is gebaseerd op recentelijk nieuws. Het is van belang dat u het artikel aandachtig leest, want erna zullen vragen volgen over het artikel. U kunt delen die u het meest belangrijk vindt markeren door erop te klikken. Er wordt gekeken welke delen u als belangrijk ervaart.

Q26 Lees alstublieft het onderstaande artikel en markeer de gebieden waarin informatie staat die u het belangrijkst vindt. (Bron: NOS)

(een van de vier artikelen, mogelijkheid tot markeren van zinsdelen.)

Q13 Geef aan in hoeverre het volgende voor u van toepassing is (in schattig van percentages)

_____ Ik heb de inhoud van het artikel begrepen (1)

_____ Ik heb de stukken gemarkeerd waarvan ik denk dat ze het belangrijkst zijn (2)

_____ Ik zou iemand anders nu kunnen vertellen over de inhoud van het artikel (3)

Q14 Kunt u in een of twee zinnen de kern van het artikel samenvatten? Denk hierbij niet te lang na, maar schrijf op wat in u opkomt.

Q18 Geef aan hoe belangrijk u de volgende punten acht. "Belangrijk" betekent dat u vindt dat er veel aandacht voor moet zijn.

	Heel belangrijk (1)	Belangrijk (2)	Een beetje belangrijk (3)	Neutraal (4)	Een beetje onbelangrijk (5)	Onbelangrijk (6)	Heel onbelangrijk (7)
Nationale veiligheid (6)	○	○	○	○	○	○	○
Gezondheid (2)	○	○	○	○	○	○	○
Economie (3)	○	○	○	○	○	○	○

Q15 Geef aan in welke mate u het eens bent met de onderstaande beweringen.

	Volledig mee oneens (1)	Oneens (2)	Beetje oneens (3)	Neutraal (4)	Beetje eens (5)	Eens (6)	Volledig mee eens (7)
Klimaatverandering vindt plaats door menselijk handelen. (1)	○	○	○	○	○	○	○
Klimaatverandering is een serieus probleem voor de mensheid. (2)	○	○	○	○	○	○	○
Overheden, bedrijven, industrieën en individuen moeten bijdragen aan oplossingen om klimaatverandering tegen te gaan. (3)	○	○	○	○	○	○	○
Ik ben bereid om geld, tijd en energie bij te dragen aan oplossingen om klimaatverandering tegen te gaan. (4)	○	○	○	○	○	○	○
Ik ondersteun beleid om broeikasgas-uitstoten zoals CO2 en methaan te verminderen. (5)	○	○	○	○	○	○	○

Q20 Hoe belangrijk vindt u de rol van de volgende actoren in klimaatverandering tegengaan? Zet ze op volgorde van "belangrijkst" naar "minst belangrijk".

_____ Overheden (1)

_____ Bedrijven en Industrieën (2)

_____ Individuen (3)

Q16 Bent u religieus?

○ Ja, ik ben actief gelovig (1)

○ Ja, maar ik doe niet veel met mijn religie (2)

○ Nee (3)

Q17 Zou u uw eigen politieke ideologie eerder als links of als rechts beschouwen? Plaats uzelf op de onderstaande schaal. 0 staat voor zeer links, en 100 staat voor zeer rechts.

_____ Links - Rechts (1)

Q18 Welke politieke partij ligt het dichts bij uw eigen politieke overtuiging?

○ VVD (1)

○ PVV (2)

○ CDA (3)

○ D66 (4)

○ GroenLinks (5)

○ SP (6)

○ PvdA (7)

○ CU (8)

○ PvdD (9)

○ 50+ (10)

○ DENK (11)

○ SGP (12)

○ FvD (13)

○ Anders, namelijk: (14) _____

Q17 Hartelijk dank voor uw medewerking! Als u kans wilt maken op de bol.com tegoedbon kunt u hieronder uw mailadres invullen, u krijgt dan bericht indien u heeft gewonnen.

Q19 Het nieuwsartikel dat u heeft gelezen bestaat uit informatie van verschillende bronnen, namelijk NOS, Trouw, Financieel Dagblad, Milieudefensie en het Longfonds. Indien u vragen heeft over de enquête en/of onderzoeksresultaten kunt u contact opnemen met 96tarabary@gmail.com.

<u>**Appendix B: frames**</u>

(word amount was not included in the survey)

Frame one: security/immigration
<u>Defensie: "klimaatverandering bedreigt nationale veiligheid"</u>

Afgelopen eeuw is de gemiddelde aardtemperatuur gestegen met 1 graad. 2016 was warmste jaar ooit gemeten. Wetenschappers zijn het eens: dit is klimaatverandering door menselijk handelen. Broeikasgassen worden door menselijke activiteit uitgestoten en houden extra zonnewarmte vast om de aarde. De hoeveelheid broeikasgassen is de laatste 150 jaar fors gestegen. Dit komt door grote groei in populatie en energiegebruik. De mens verbrand fossiele brandstoffen als olie, gas en kolen, waardoor CO2 vrijkomt. Andere grote vervuiler is de landbouw. Jaarlijks worden 70 miljard dieren verbruikt voor vlees en dierlijke producten. Dit kost veel energie en grondstoffen. Bovendien komt veel methaan vrij, een nog sterker broeikasgas. Problematische gevolgen van de opwarming zijn smelting van poolkappen, zeespiegelstijging, overstromingen, orkanen, droogte met misoogsten als gevolg, bedreiging dier- en plantsoorten.

Commandant der Strijdkrachten Tom Middendorp maakt het eind vorig jaar duidelijk: onze nationale veiligheid wordt bedreigd door klimaatverandering. Waarom? Meerderheid Nederlanders woont onder zeespiegel: deze stijgt gestaag. Verder zijn we voor levering fossiele brandstoffen afhankelijk van instabiele regio's, zoals Rusland en het Midden-Oosten. Dit maakt ons kwetsbaar. Verder legt Middendorp uit dat klimaatverandering bijdraagt aan conflicten. In Syrië ontstond chaos door extreme droogte en binnenlandse water- en voedseltekorten. Gecombineerd met islamitische ideologische conflicten, was dit een explosieve combinatie. Verder draagt klimaatchaos bij aan broedgrond voor terrorisme.

Bovendien is er een onderbelicht probleem: klimaatvluchtelingen. Defensie legt uit dat er nu extreme droogte is in Afrika. Gevolg is watertekort en mislukte oogsten. Dit is daar een probleem, maar ook hier in Nederland. Die mensen zoeken namelijk nieuwe, veiligere plekken om te wonen. Deze klimaatvluchtelingen komen naar Europa, naar Nederland. Dit probleem wordt door politici over het hoofd gezien. Ja, er moet streng en rechtvaardig grensbeleid zijn. Maar, ook een lange-termijn visie met klimaatbeleid. Politici denken aan korte termijn winst. Ze worden beïnvloed door machtige bedrijven. Dit moet anders. Het Nederlandse volk heeft baat bij migratiestromen aanpakken bij kernoorzaken. Opvang in eigen regio is nodig. Daarom moet klimaatverandering beperkt worden. Anders loopt het helemaal uit de hand. Dan worden die gebieden maar droger en komen er steeds meer mensen onze kant op.

Om nationale veiligheid te waarborgen, moet klimaatverandering beperkt blijven. Dit kan worden gedaan door efficiënter met energie en verbruik om te gaan, en snel mee te gaan in de transitie naar groene stroom. Broeikasgas uitstoot moet worden verminderd. Nederland moet het klimaat als veiligheidsprioriteit stellen. Zo ook wanneer wij in 2018 deel uit gaan maken van de VN-veiligheidsraad, zodat het hoog op de internationale agenda komt te staan. - 417 woorden

Frame two: economy

Kansen klimaatverandering: economische groei en banen

Afgelopen eeuw is de gemiddelde aardtemperatuur gestegen met 1 graad. 2016 was warmste jaar ooit gemeten. Wetenschappers zijn het eens: dit is klimaatverandering door menselijk handelen. Broeikasgassen worden door menselijke activiteit uitgestoten en houden extra zonnewarmte vast om de aarde. De hoeveelheid broeikasgassen is de laatste 150 jaar fors gestegen. Dit komt door grote groei in populatie en energiegebruik. De mens verbrand fossiele brandstoffen als olie, gas en kolen, waardoor CO_2 vrijkomt. Andere grote vervuiler is de landbouw. Jaarlijks worden 70 miljard dieren verbruikt voor vlees en dierlijke producten. Dit kost veel energie en grondstoffen. Bovendien komt veel methaan vrij, een nog sterker broeikasgas. Problematische gevolgen van de opwarming zijn smelting van poolkappen, zeespiegelstijging, overstromingen, orkanen, droogte met misoogsten als gevolg, bedreiging dier- en plantsoorten.

In het Parijsakkoord in 2015 is gekozen voor een transitie naar duurzame energie. Nederland is nu nog een economie gebaseerd op fossiele brandstoffen. Vergeleken met andere Europese landen, bungelt Nederland achteraan wat betreft duurzame energie. Dit moet veranderen. De groene transitie is onvermijdelijk, hiervoor is een actieve en innovatie houding nodig. Nederland moet snel meegaan in de transitie naar een groene, circulaire, schone economie. Dan kan ons land koploper zijn en profiteren van grote economische mogelijkheden. Concreet betekent dit bijvoorbeeld dat geen olie meer wordt geïmporteerd uit het Midden-Oosten, wat daar zou worden gebruikt om hun land te ontwikkelen, maar dit geld in onze eigen economie wordt gestoken. Banen creëren in de groene energie sector, is voordelig is voor werkelozen in Nederland. Zo kan armoede in eigen land worden tegengegaan, en nationale economische groei plaatsvinden.

In april 2017 riepen 90 hoogleraren de Tweede Kamer op fors te investeren in de nieuwe duurzame economie. Er moet worden geïnvesteerd in mensen, kennis, arbeid en scholing. Economische systeemwijzigingen zijn nodig, met grootschalige opwekking van duurzame energie. Het principe "de vervuiler betaalt" moet worden gebruikt. Duurzaam gedrag moet worden gestimuleerd en beloond.

De investering kan zorgen dat Nederland niet achteraan bungelt. Er is sterk groeiende vraag naar duurzame energie uit Nederland. Onlangs is een uitzonderlijke 10-jarige windenergie deal met Google gesloten. Helaas besluiten multinationals soms toch voor een ander land te gaan. Nederland produceert namelijk nog onvoldoende groene stroom voor de behoeftes. Directeur van het grote havenbedrijf Groningen Seaports, Harm Post, wil de energietransitie als topprioriteit. Hij legt uit dat multinationals willen voortbestaan, en dit niet mogelijk is zonder groen te denken. Dit is niet alleen het beste voor het klimaat, maar ook voor de economie. - 416 woorden

Frame three: health

Klimaatverandering tegengaan = beschermen gezondheid

Afgelopen eeuw is de gemiddelde aardtemperatuur gestegen met 1 graad. 2016 was warmste jaar ooit gemeten. Wetenschappers zijn het eens: dit is klimaatverandering door menselijk handelen. Broeikasgassen worden door menselijke activiteit uitgestoten en houden extra zonnewarmte vast om de aarde. De hoeveelheid broeikasgassen is de laatste 150 jaar fors gestegen. Dit komt door grote groei in populatie en energiegebruik. De mens verbrand fossiele brandstoffen als olie, gas en kolen, waardoor CO_2 vrijkomt. Andere grote vervuiler is de landbouw. Jaarlijks worden 70 miljard dieren verbruikt voor vlees en dierlijke producten. Dit kost veel energie en grondstoffen. Bovendien komt veel methaan vrij, een nog sterker broeikasgas. Problematische gevolgen van de opwarming zijn smelting van poolkappen, zeespiegelstijging, overstromingen, orkanen, droogte met misoogsten als gevolg, bedreiging dier- en plantsoorten.

Klimaatverandering heeft grote gevolgen voor de menselijke gezondheid. Door uitstoot van industrieën, huishoudens, vervoer en veehouderij wordt de lucht vervuild met fijnstof. Bij ademhaling wordt ongezonde fijnstof diep in het lichaam opgenomen. Luchtvervuiling is jaarlijks doodsoorzaak voor duizenden Nederlanders. Snelweguitstoot heeft hetzelfde effect als sigaretten meeroken. Kinderen die opgroeien met luchtvervuiling hebben later zwakkere gezondheid. Zwangere vrouwen hebben verhoogde kans op gezondheidsproblemen met de ongeboren baby. De Wereldgezondheidsorganisatie adviseert een maximum aan luchtvervuiling, maar onze lucht is op veel plekken veel viezer. Nederland heeft de meest vervuilde lucht van Europa, er is daarom grote vooruitgang te boeken.

Het longfonds wijst op de gezondheidsgevaren van fijnstof inademen. Vieze lucht veroorzaakt en verergert longziekten als astma, COPD en longkanker. Ook hart- en vaatziekten zijn het gevolg. Vooral kinderen, ouderen en zwakkeren zijn slachtoffer. Een ander gezondheidsprobleem aan de opwarming van de temperatuur zijn dat infectieuze ziektes zich sneller verspreiden. Bacteriën verspreiden zich dan sneller en hygiëne is lastiger te waarborgen. Het is nu al zichtbaar in de hoge stijging van Malaria. In een opgewarmde aarde zullen steeds meer ziektes de kans krijgen zich te verspreiden.

Het is goed om klimaatverandering tegen te gaan zodat we gezonder zijn door schonere lucht. Betere lucht is een lokaal gezondheidsvoordeel dat kan worden bereikt door een milieubewuste koers. Uitstoot moet worden verminderd. De weg hiernaartoe bevordert gezondheid. Als mensen vaker de fiets nemen in plaats van de auto, zullen ze meer bewegen. Dan neemt kans op ziektes af. Verder is het gezond als mensen minder verzadigde vetten als die in vlees eten. Gezondheidsproblemen zullen dan afnemen, en het heeft een positieve invloed op het milieu. Oplossingen die klimaatverandering tegengaan zijn dus tevens manieren om te zorgen dat de gezondheid van mensen vooruit gaat. - 417 woorden

Frame four: unrelated political topic

Tusk: EU-lidstaten unaniem achter brexit-strategie

Onlangs zijn de regeringsleiders van de 27 'achterblijvende' EU-landen het eens geworden over hoe de brexit moet worden aangepakt. De EU-landen steunen de richtlijnen voor de onderhandelingen met Londen over de brexit. Dat heeft EU-president Donald Tusk via Twitter bekendgemaakt, tijdens een top van de 27 lidstaten in Brussel. De deelnemers werden het in minder dan een kwartier eens. De leidraad voor de brexit-onderhandelingen werd eind maart 2017 bekend gemaakt. Daarin staat dat eerst de uittreding uit de EU wordt geregeld. Daarna pas wil de Unie met de regering in Londen praten over de toekomstige relatie. De Britten zullen veel geld moeten betalen voor de uittreding. Deze rekening voor het verlaten wordt door sommige lidstaten op 60 miljard euro geschat. "Een gratis brexit is nu eenmaal niet mogelijk", zei de Belgische premier Michel.

De Britten willen het liefst al direct onderhandelen over een nieuw handelsakkoord. Tusk wil echter eerst de brexit en bijbehorende rekening regelen. De steun van de lidstaten voor de richtlijnen komt niet als een verrassing. Wel lopen de meningen uiteen over hoe 'hard' de Britten moeten worden aangepakt. Hard of zacht, dat is de vraag, om Shakespeare vrij te citeren. De brexit-onderhandelingen bevatten alle ingrediënten voor een klassiek drama. Felle voorstanders van de harde lijn, zoals Angela Merkel, staan tegenover landen die voor een zachte aanpak zijn, zoals Finland, Zweden, Spanje en Nederland.

"Groot-Brittannië moet bloeden", zegt correspondent Jeroen Wollaars over de gevoelens die overheersen in Duitsland. "Als het land er echt uit wil, kan dat niet zonder pijn." Berlijn wil voorkomen dat meer landen vertrekken. "Het beeld moet zijn dat een vertrek uit de EU niet vanzelf gaat en veel geld kost." De Zweden zijn daarentegen meer voor een pragmatische aanpak. "Er staan grote handelsbelangen op het spel", vertelt Scandinavië-correspondent Rolien Créton. Groot-Brittannië is een belangrijke afzetmarkt voor Zweden. In Oost-Europa wordt vooral gekeken naar de migranten. Kamermeisjes, buschauffeurs, vuilnismannen, babysitters: veel slecht betaald werk wordt gedaan door Polen, Hongaren, Roemenen en Bulgaren. Meer dan 850.000 Polen en zeker 200.000 Roemenen wonen en werken in Groot-Brittannië. "De belangrijkste eis van Roemenië is dan ook dat staatsburgers die nu al in Groot-Brittannië wonen, dezelfde rechten moeten behouden", zegt Balkan-correspondent Mitra Nazar. De Bulgaren zijn het daarmee eens.

En zoals het hoort bij een goed koningsdrama is er gedoe over de erfenis. Over hoeveel de Britten moeten betalen, wie de Europese instellingen die nu in Groot-Brittannië zitten mogen overnemen. Daar zullen nog heel wat politieke discussies over volgen. - 415 woorden