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Abstract

This study aims to understand criticism of institutionalised climate science among the scientifically literate in the Netherlands by means of 15 online in-depth interviews. This research finds that most respondents share an ostensibly contradictory position. On the one hand, they ascribe great importance towards the modern scientific method and principles, but, on the other, they adopt a critical stance towards institutionalised climate science. A first element that helps us understand this science confidence gap is their commonly shared individualist epistemology, meaning that most respondents regard the individual as central to obtaining knowledge and determining what is true. This group of scientifically literate climate change critics generally centre this epistemology around the modern scientific method and principles, as illustrated by their gathering and evaluation of information (e.g. triangulation, preferring ‘raw’ data, emphasising methodological transparency). In fact, respondents often regard such an individualist and critical disposition to be part of a ‘good scientific attitude.’ This helps us understand why most respondents think it unwise to blindly accept the ‘general’ conclusions of institutionalised climate science. However, this ‘scientific scepticism’ is not only applied to the information provided by climate science, but also to institutionalised climate science itself, which is in line with theories of reflexive-modernisation. The respondents identify three mechanisms that are perceived to inhibit the scientific freedom of institutionalised climate science, namely (1) the politicisation of the climate change issue, (2) institutional path-dependency and (3) the negativity bias inherent in the scientific endeavour. A fourth critique – the ‘unscientificness’ of climate models – generally pertains to a subset of the respondents, the engineers, and regards the perceived lack of scientific rigour applied in climate modelling. By illustrating what happens when the lens of ‘scientific scepticism’ is projected onto institutionalised science itself, this research empirically substantiates theories of reflexive-modernisation that have thus far remained in the realm of the theoretical. This invites future research focusing on other groups displaying a science confidence gap (e.g. vaccine critics critical of medical science) to see how these different critiques of institutionalised science compare. Doing so will further improve our understanding of critique of scientific institutions among critical groups in contemporary Western societies.

Keywords

Climate Change Scepticism; Science Confidence Gap; Modern-Reflexivity; Scientifically Literate; Distrust in Scientific Institutions

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1. Introduction

Climate change is commonly considered to be one of the biggest global challenges of today.

According to the literature, there is general consensus within the climate sciences about the human-induced causes of climate change (e.g. Cook et al., 2016) and climate scientists often indicate that this climate change has potentially disastrous consequences for humanity (e.g. Battisti & Naylor, 2009). According to Eurobarometer (2014), 69% of Europeans worry about manmade climate change and around 9% thinks it is not a serious problem at all, illustrating how the general conclusions of institutionalised climate science are not indiscriminately adopted by everyone. To better understand this phenomenon of climate change criticism and distrust in institutionalised climate science, a plethora of quantitative research has been conducted. Two prevalent and recurrent predictors of climate change criticism and distrust in institutionalised climate science are a lower level of education (Hoekstra, 2020; Hornsey, Harris, Bain, & Fielding, 2016; Kvaløy, Finseraus, & Listhaugen, 2012; Lewis, Palm, & Feng, 2019; Tranter & Booth, 2015) and a lack of scientific knowledge (Guy, Kashima, Walker, & O'Neill, 2014; Hornsey et al., 2016; Tranter & Booth, 2015). In sum, a critical perspective on climate change is generally more common among those without access to scientific education and knowledge.

However, these general patterns do, of course, not apply to *all* climate change critics. In fact, some climate change critics use a scientific repertoire when substantiating their perspective on the climate change issue. Consider, for example, those climate change critics that appear in the media. One of the most famous climate change critics in this regard is political scientist and statistician Bjorn Lomborg (2020), who recently wrote a book questioning the economic feasibility and social desirability of the greenhouse gas reduction targets set in the Paris Agreement. These scientifically literate climate change critics present an interesting sociological puzzle. First, a higher level of scientific literacy (Guy et al., 2014; Hornsey et al., 2016; Tranter & Booth, 2015) and more factual knowledge about climate change (Stoutenborough & Vedlitz, 2014) generally leads to more climate change concern. However, these climate change critics often reach the opposite conclusion, namely that climate change will not lead to substantial problems in the future (Capstick & Pidgeon, 2014). Second, using this scientific repertoire implies these critics are socialised in scientific and other modern institutions. In general, this familiarity with modern institutions breeds high levels of scientific trust (Lareau, 2015). Again, in the case of these scientifically literate critics, this seems to be the exact opposite, since they are critical of climate change and institutionalised climate science. Saliently, this type of scientifically literate climate change criticism does not solely pertain to a few 'lone wolfs' sporadically appearing on television or in the newspaper. On the contrary, these public critics are only the tip of the iceberg. In the online sphere, sceptical websites like *WattsUpWithThat* (<https://wattsupwiththat.com/>), *Climate Etc.* (<https://judithcurry.com/>) and *Climategate* (<https://www.climategate.nl/>) are thriving discussion-platforms, which aim to provide a scientific

alternative to the ‘mainstream climate change narrative’. This online prevalence combined with their deviation from the general pattern, makes it highly relevant to create an in-depth understanding of critique of institutionalised climate science among the scientifically literate. This is done by answering the following research question: *“How can we understand critique of institutionalised climate science among the scientifically literate in the Netherlands?”*

The particular context of this study – the Netherlands – is inspired by the aim of this research. To create an in-depth understanding of climate change criticism among the scientifically literate, this research attempts to “see reality through their eyes” (Hochschild, 2016, p. 5). In order to grasp this reality, it is important to be familiar with and understand its cultural context. When respondents, for example, refer to the Royal Netherlands Meteorological Institute (KNMI) or certain climate policy initiatives – emission quota for the agricultural sector – it helps if the researcher is acquainted with these phenomena, since this leads to a more valid understanding of this particular perspective. That is why this research focuses on the Netherlands, a cultural context of which I, the researcher, have a broad and in-depth understanding.

2. Sensitising notions

Due to the novelty of this sociological puzzle, this research is exploratory in nature with the aim of arriving at empirically grounded theoretical insights. Since this research attempts to understand a deviation from a general pattern, it adopts an analytical lens that best facilitates this process, namely abductive analysis (Timmermans & Tavory, 2012). Abductive analysis is a qualitative data analysis approach focusing on theory construction. Contrary to induction and deduction, abduction starts with the observation of a surprising fact – e.g. critique of institutionalised climate science among the scientifically literate – and then constructs possible reasons for this interesting phenomenon. These possible reasons are, however, not the product of ‘random conjecture’, but informed by the broad theoretical knowledge of the researcher. This broad theoretical awareness is not a return to deduction, but, instead, can be best understood as multiple “sensitising notions” that inform the research (Blumer, 1954). During the analysis, the theorisation could be described as a constant interplay between the sensitising notions of the researcher and the raw data (Timmermans & Tavory, 2012). To give an idea of these *initial* theoretical notions that informed the topic list and the analysis, this research will elaborate on three of them. However, as will be illustrated by the results, not all sensitising notions proved equally relevant when understanding climate change criticism among the scientifically literate.

The first sensitising notion is inspired by theories of reflexive-modernisation (Beck, Giddens, & Lash, 1994). These theories argue that scientific institutions instil a ‘sceptical attitude’. Think, for example, of the scientific principle of scepticism towards existing knowledge and its emphasis on individual and critical thinking. However, in second modernity, according to theories of reflexive modernisation, this scientific scepticism is also projected onto scientific institutions themselves.

Through this paradigm, this means that highly reflexive and scientifically literate individuals are more likely to adopt a critical perspective on widely, and often tacitly, accepted scientific ‘truths’, like anthropogenic global warming. This group of people subsequently challenge such a widely accepted ‘fact’ by doing their own research and taking a critical stance towards scientific institutions.

Another sensitising notion is general anti-institutionalism. Although in the Netherlands trust in public institutions is relatively high, this is not necessarily reflected in the public arena. In the last year, farmers, nurses, climate activists, students and COVID-19 sceptics have took to the streets to voice their dissatisfaction with the status quo (Schmeets & Exel, 2020). Even though there have not been large-scale public protests against climate science or climate politics, it might nonetheless be that climate change scepticism among the scientifically literate can be partially understood through anti-institutionalism. One of the ways in which anti-institutionalism can be understood is through a rationalist, evaluative framework. In this framework, individuals evaluate institutions on their perceived utility and efficacy. Institutions that are perceived to be trustworthy generate trust; institutions that are perceived to be untrustworthy generate criticism (Mishler & Rose, 2001; Hakhverdian & Mayne, 2014). This is especially the case for the scientifically literate, since they are often socialised in modern institutions and thus are better able to accurately gauge what is going on in scientific and political institutions (Hakhverdian & Mayne, 2014). This means that if climate scientists or politicians are perceived to distort the truth, the scientifically literate are more likely to become sceptical than their less literate counterparts. An example of such a ‘trigger’ might be the Climatic Research Unit (CRU) email controversy of 2009 (commonly referred to as Climategate), during which over a 1,000 emails of the CRU were leaked. These emails allegedly indicated that climate scientists were actively searching for findings that corroborated the anthropogenic global warming hypothesis. Although climate scientists stated that the emails were taken out of context and it did not change the scientific consensus on anthropogenic global warming, Leiserowitz, Maibach, Roser-Renouf, Smith, and Dawson (2013) found that this event nonetheless led to more climate change criticism. It might thus be that instances like Climategate have led some more educated individuals to evaluate climate scientists as inept, which might subsequently help us understand their critique of institutionalised climate science.

The third sensitising notion is inspired by the polarised cultural climate in Western societies. In his research on mass opinion polarisation, DellaPosta (2020) finds that mass opinion on isolated issues has not necessarily polarised. However, due to the collapse of previously cross-cutting interactions, beliefs have become more consolidated. This means that beliefs are now often clustered in cohesive packages in a so-called ‘culture war’. Due to being embedded in a consolidated package of beliefs, people increasingly feel like they do not understand the other group, which leads to an aversion towards the cultural ‘Other’ (e.g. Noordzij, De Koster, & Van der Waal, 2020). One issue that seems part of a cohesive package of beliefs is climate change concern. Climate change is a culturally charged

issue, in the sense that climate change concern and activism are often propagated by people who are culturally progressive. If someone identifies with a cohesive beliefs package that is more conservative, this might lead someone to be ‘principally opposed’ to climate change, since he or she feels an aversion towards the group that stresses its importance. It might subsequently be that climate change criticism among the scientifically literate can be explained by a form of motivated reasoning: people do not interpret information objectively, but try to arrive at a particular conclusion that is consistent with their cultural or social identity (Bolsen, Druckman, & Cook, 2014). If someone loathes the social and cultural ideology of those that propagate climate change concern and activism, this person will be motivated to refute or discredit this viewpoint. This might subsequently help us understand why some of the scientifically literate distrust institutionalised climate science, since it is perceived to substantiate the ‘culturally progressive worldview’.

It is again important to stress that the above-discussed theory did not function as a ‘theoretical framework’ culminating in three hypotheses. This section merely presents a few initial notions kept in mind during the interviews. The main role of this section is to illustrate the principle of sensitising notions in abductive analysis and to provide an insight into the researchers’ thought process and state of mind prior to the interviews and analysis.

3. Research design

The focus of this research is how the scientifically literate in the Netherlands understand their climate change criticism. This type of climate change criticism is mostly prevalent in the online sphere. There are hundreds of international blogs on which users critique institutionalised climate science by using a scientific repertoire (Boussalis & Coan, 2016; Elgesem, Steskal, & Diakopoulos, 2015; Schmid-Petri, 2017; Sharman, 2014). By far the most prominent critical platform in the Netherlands is *Climategate* (<https://www.climategate.nl>), which is named after the Climategate Affair of 2009. This event led several prominent Dutch climate change critics to establish a website with the aim of presenting a scientific alternative to the ‘climate alarmism of mainstream climate science’. The articles are written by a select group of writers and discuss climate science, politics and policies. The website, however, does not merely provide information. *Climategate* is also a thriving discussion-platform and it is not uncommon for an article to receive over 100 comments. This made *Climategate* the ideal platform to recruit scientifically literate climate change critics in the Netherlands.

However, before discussing how these critics were approached, it is important to provide some context. Generally speaking, most people living in the Netherlands believe manmade climate change exists and should be tackled. This concern about climate change is even higher among the more educated part of the population (Poortinga, Whitmarsh, Steg, Böhm, & Fisher, 2019). This makes climate change criticism among the scientifically literate a non-hegemonic worldview. To better understand why these people deviate from the ‘social norm of climate change concern’, this research

adopts a cultural-sociological approach that puts people's own understanding of the world at the centre of inquiry (Charmaz, 2006). People who deviate from the social norm are often quickly dismissed as 'crazy' or 'ignorant'. This research believes that such an easy dismissal is presumptuous. When studying the perspectives of non-hegemonic groups, "it is better to assume that it makes some kind of sense and to look for the sense it makes" (Becker, 1998, p. 44). Grounded in this research tradition, the goal of this study is not to condemn or promote climate change criticism; instead, the aim of this research is to develop a sociological understanding of climate change criticism among the scientifically literate by exploring how *they* view climate change.

When recruiting the respondents, the researcher contacted the organisation of *Climategate* via the contact-page of their website. The website is maintained by two moderators, who functioned as gatekeepers when it came to accessing the relevant respondents. During this first step (see Appendix I), the researcher introduced the research and politely asked if the moderators were willing to post an interview invitation (see Appendix II) on *Climategate's* Facebook-page and/or website. To ensure the sampling of scientifically literate climate change critics, the interview invitation focused on active *Climategate* users. Active usage meant writing the articles, commenting on the articles and/or frequently visiting the website to read the articles and/or comments. Since the researcher was aware that climate change critics might be distrusting of scientific institutions, both these messages were thoughtfully and carefully worded so as not to incite any aversion.¹ One of the moderators consented and indicated that the researcher was allowed to post the invitation in the comments-section of one of their articles. The first instances after the posting of the invitation proved most crucial, since the first few comments approached the invitation with suspicion. However, by being present on the platform and reacting swiftly, the researcher was able to appease doubts and answer questions where necessary.

Given the aim of this study, this research conducted online in-depth interviews, because this enabled a detailed examination of the respondents' viewpoints (Charmaz, 2006). The choice of online interviews was, due to the pandemic and subsequent guidelines, one of necessity. The initial invitation led to a total of 13 respondents. Using the method of snowballing, this research was able to increase the amount of interviews to 20. The length of the interviews ranged from 53 minutes to four hours and three minutes (average length of around two hours). After 15 interviews, no new themes emerged during the data collection, indicating that theoretical saturation was achieved (Charmaz, 2006). This saturation was confirmed with five more interviews. Since the guidelines indicate that the maximum

¹ Although meticulous planning went into writing the invitation, the use of the word 'climate change scepticism' proved the wrong choice. Since several articles on the website referred to other critics as 'sceptics', the researcher thought critics regarded the term 'sceptic' as a 'badge of honour' (scepticism being part of a 'good scientific disposition'). However, the first few reactions on my invitation illustrated that not all climate change critics regarded it as such, which illustrated how the self-identification shared by some is not the self-identification of all.

number of in-depth interviews for a master thesis is 15, only the first 15 interviews were included in the analysis.²

To ensure cyber security and the privacy of respondents the applications prescribed by the university – Zoom and Microsoft Teams – were used. To ensure the well-being of the researcher and the researched, the researcher was constantly mindful of the ethical code of conduct for social science research (National Ethics Council for Social and Behavioural Sciences, 2018). Before the interviews, the researcher asked respondents to accept the terms and conditions outlined in a form of informed consent (see Appendix III). To ensure the privacy of the respondents, their birth names were pseudonymised during the transcription process. All retrieved data was safely stored on the password protected hard-drive of the researcher and a secure online workspace facilitated by the university (Blackberry Workspace).

To ensure the centrality of the respondents' viewpoints, the interviews had an open character. There were, however, multiple topics that were discussed in all interviews. To make sure that the topics of the interviews were relevant, this research conducted an explorative qualitative content analysis (for examples, see De Koster & Houtman, 2008 & De Koster, 2010). The relevant articles and, more importantly, their comment sections were selected using purposive sampling. The selection criteria were that (1) the article either discussed climate science, politics or policies and (2) that the engagement with the article was strong (more than 100 comments) (for excerpt, see Appendix IV). This explorative content analysis culminated in a few talking points which partially guided the interviews (see Appendix V). Besides being functional, this exploratory content analysis also had a more practical use. By reading the articles and comments on *Climategate*, the researcher became familiar with the topics discussed and the language used during these discussions. This knowledge subsequently helped to make interviewees feel comfortable and taken seriously, which led to more fruitful and honest conversations. The open and congenial atmosphere during the interviews was attested by all 20 respondents, who generally regarded the interviewing experience as pleasant and unprejudiced.

After the interviews were conducted and transcribed verbatim, this research analysed the data in three phases: initial, focused and theoretical coding (Charmaz, 2006). During the phase of initial coding, the researcher coded every line of transcript, which prompted the researcher to “remain open to the data and to see the nuances in it.” (Charmaz, 2006, p. 50) This helped to establish analytical lines, which were expanded upon in the phases of focused and theoretical coding. Since in abductive analysis there is a strong emphasis on theory building (Timmermans & Tavory, 2012), the researcher used the method of writing theoretical memos. These memos were written after every individual

² I hope to convert this thesis into an article. In this article, the other five articles will be included.

interview and throughout the different analytical phases. Writing these memo's substantially assisted the researcher in the process of theory building.

4. Results

The analysis of the data resulted in an in-depth understanding of climate change criticism among the scientifically literate. Keeping in mind the abductive emphasis on theory building, the results section focuses on what proved most interesting in that regard, namely how can the critique of institutionalised climate science among the scientifically literate be understood?

4.1. "It seems like someone here is trying to pull the wool over my eyes"

When talking to the respondents about their critical perspective on climate change, most described a certain trigger which raised questions and so led them on a scientific quest to uncover 'what is really going on'. For Martin, the first trigger was "Al Gore's movie [an Inconvenient Truth]" and his "obsessive focus on proving that mankind's contribution was the dominant factor [explaining contemporary climate change.]" Stefan indicated that his reason for reading up on climate change was that, at first, "there were several people who panicked and stated: we are entering a new Ice Age!", while these same people, 10 years later, "[prophesied] a new disaster because of increased CO₂ emissions and global warming." Other triggers included the failing "concretisation of the catastrophic [aspects of climate change]" (Kevin), the IPCC conference of 1992 "which identified global warming as an acute danger" (Karel), a discussion regarding the energy transition (Roel) and warnings about catastrophic climate change by, amongst others, Stephen Hawking (Niels).

Although for most respondents these events solely marked the beginning of their critical inquiry into climate change, some others relayed their 'transition' in the form of an "awakening story", during which they transcended a previous state of ignorance to arrive at a new "truth". According to DeGloma (2014), such "awakening stories" typically follow the same three-stage structure of describing (1) a previous state of ignorance, (2) an "awakening" or moment of realisation and (3) an arrival at a new "truth" or perspective. When describing the first stage, these respondents either described a certain apathy towards the subject – "I was not really interested in climate change" (Bart) – or an active involvement with the environmentalist cause – "back then I was quite leftist and environmentally aware." (Jaap) Characteristic of this 'stage of ignorance', is that these respondents were unaware of or unacquainted with the science underlying climate change and/or environmentalism.

However, same as the other respondents, they described a certain trigger or event which led them to study the science underlying climate change and/or environmental activism. This acquaintance with climate/environmental science led to a new perspective on the "truth" and so initiated their transition. For Lucas, the trigger was an altercation with a professor of toxicology "[who] sent some literature which I started reading." Although at first, due to his non-academic background, Lucas

found the articles quite complicated, he nonetheless “fought through it”, because it fascinated him immediately. Reading these articles, he realised that “the environmental movement, which I was then a part of, got it completely wrong!” Jaap described a similar, yet different, realisation. When asked by an organisation to do a presentation on renewable energies and the Kyoto Protocol, he took six months to read up on global warming. Reemphasising his wholehearted devotion to the ‘sustainable cause’, his aim was to “once and for all prove that we should reduce our CO₂ emissions to zero.” However, when he read up on the effect of CO₂ on global warming he concluded that there was “not a single sensible argument of that [CO₂-] story”, but that, instead, there were “a lot of false proofs.” Although this exploration of the literature marked the beginning of his ‘conversion’, it took him two more years to self-identify as a climate critic. The reason being that he “could not fathom [...] that the [CO₂]-story was incorrect. ... It was such a strong belief, also for me, that it [the transition] took a few years.” Bart’s motivation to engage with the underlying science was when he could not find any data on the integration of windmills in the energy system, which “aroused [his] suspicion” and led him to become interested in the foundation of the energy transition: climate change. His first step was “picking up a textbook that relayed how people know the workings of the climate.” When reading, he perceived that one of the central tenets underlying climatology seemed faulty. After doing some calculations he realised that the “entire foundation is no good!” This led him to further “dive” into the climate debate, which made him realise that there were others who had come to similar conclusions, which so confirmed his suspicions and resulted in him becoming critical of climate change.

For Jaap, Lucas and Bart, this ‘enlightenment’ and subsequent newly acquired perspective led them to become actively involved in the climate change debate. Lucas indicated that he “wants to show people that they need not be scared of everything”, Jaap told that his perspective on climate change inspired him to work on “a foundation which politicians can use when it becomes politically interesting to have a different [more critical] stance [on climate change]” and Bart relayed how he, until recently, conducted readings informing people about the inefficiency of renewable energy initiatives. These stories show how, for some respondents, acquiring this new perspective on climate change was a life altering experience. In line with DeGloma’s (2014) account of “awakening stories”, these narratives follow the conceptual pattern of ignorance, realisation and enlightenment.

4.2. “Doubt commences wisdom and all science”

Although the specific triggers, trajectories and perspectives differed per respondent, this research was nonetheless able to make two overarching observations. First, all respondents now find themselves at a point where they are critical towards institutionalised climate science³. Second, all respondents look at

³ I do not presume to know the ‘main perspective’ shared in the field of climate science. Several respondents referred to critical climate scientists, like Roy Spencer and John Christy, who are nonetheless active in institutionalised climate science. However, since institutionalised climate science is generally perceived to support the notion that climate change is manmade and most likely problematic, this research defines ‘institutionalised climate science’ as such.

climate change through a scientific lens, meaning that they motivate their critical perspective by means of a scientific repertoire. This means that, on the one hand, my respondents showcase a strong affinity with science, but, on the other, are critical towards institutionalised climate science. At first glance, these two standpoints seem at odds with one another. In general, the literature finds that more affinity and familiarity with science leads to more trust in scientific institutions (Achterberg, De Koster, & Van der Waal, 2017; Lareau, 2015). How can we understand the relationship between scientific literacy and criticism of climate science from the perspective of this group of respondents?

A first element to consider is the epistemological disposition of most of the respondents. Most respondents identified themselves as critical, rational, inquisitive and/or independent counter-thinkers. In line with this self-identification, most respondents had an individualist epistemology, meaning that they regarded the individual as central to obtaining knowledge and determining what is “true” (Harambam & Aupers, 2015; Houtman & Aupers, 2007; Van Zoonen, 2012). This individualist epistemology is commonly found among nature-oriented and/or spiritually inclined groups, who centre their epistemology around an “intuition” (Houtman & Aupers, 2007) or “gut-feeling” (Ten Kate et al., 2020). However, just as among a certain subset of vaccine critics (Ten Kate, De Koster, & Van der Waal, 2020), this is not the case for this group of respondents, since they centred their individualist epistemology around the modern scientific method and principles. Illustrative of this scientific, yet individualist, disposition was their description of how they gathered and evaluated the reliability of information. Typically, respondents indicated that they engaged in a form of data triangulation, meaning that they formed their perspective after comparing different, often contrasting, sources of information. Martin, for example, indicated that he “tries to read one book and then reads another book that opposes it [...] Ultimately, you gauge the different viewpoints to what you find most logical.” Vincent indicated that he “tries to find the two opposites [...] read these thoroughly [...] and to compare these in order to retrieve the right and useful information.” Paul described his data-gathering process via the metaphor of making a puzzle. “[The reliability of climate change information is based on] my own judgement. I try to see the whole picture [...] If the puzzle piece fits, it is added [to the overall picture].” Other strategies included looking at the raw, unbiased, observational data (Karel and Tom), critically checking the references of articles (Niels and Roel) and considering the methodological parameters used in scientific articles (Abel and Winand).

Several respondents indicated that having this individualist epistemology centred around the scientific method differentiated them from most people in society. Most people were observed to acquiesce to the general narrative of “climate doomsday scenarios” (Lucas) under the pretence of “it must be true, others are saying it, so it is probably the case.” (Tom) As Dennis expounded: “if you are always exposed to a one-sided climate change narrative, then there is no one who can escape it. Simply put, if it is not your area of expertise, then you do not have the time to investigate if this narrative is correct.” Martin recognised this same acquiescence to the ‘climate change narrative’

among his friends and family. “Most people find it too complicated. [...] They argue: well, others [the media] are saying it, so it must be true.” Besides differentiating themselves from society at large, some also argued that this individualist epistemology differentiated them from the more ‘gullible’ climate change critics. Just as those blindly following the ‘climate doomsday scenarios’, these critics were also sometimes perceived to fall prey to forces of “groupthink” (Jaap and Stefan) and “wishful thinking” (Dennis, Paul and Winand)

When talking about the origins of this individualist epistemology, most respondents described it as being a more general disposition. This was illustrated by the fact this individualist epistemology often did not just pertain to climate change, but also to a host of other topics like the energy transition (Jaap, Roel, Kevin, Bart and Tom), COVID-19 (Karel, Paul, Jaap and Lucas), nuclear energy (Lucas and Jaap) and quantum physics (Niels). Furthermore, for some this individualist disposition was apparent from fairly early on. For Martin the earliest memory of his personal inquisitiveness was how, as a small child, he was confronted with a giant bookcase at a friend’s house. “I always found that fascinating. Those big glass doors, all those books behind it. It made me curious about what was actually in those books.” To illustrate his ever-present independence and critical thinking, Karel relayed how, as a five-year-old, he “skipped school for a week with a friend” to “wander the streets of The Hague” and how, at 10, he started to “question the faith” of his upbringing.

Although often described as a more general disposition, several respondents also (partially) linked their individualist epistemology and critical perspective to their time in academia or their professional careers. Roel, for example, indicated that his critical lens was partially polished during his time in academia, because, when doing research, you are “expected” to “look at articles of other researchers and to be critical of those articles. To at least see if it makes sense.” Besides, Roel indicated that this ‘scientific scepticism’ helped him “make a living.” He previously “worked in automation”, which meant that he “spent a substantial amount of time testing. [...] If you are prone to naivete, then you are not very successful.” A similar, yet different, story was told by Karel who, although indicating that his critical perspective was a general character trait, also connected his “sceptical disposition” to his academic and professional career. Karel relayed how, while writing his thesis, he “found something and thought: hey this does not add up! [...] I mentioned this in my thesis and my professor thought it to be so interesting that he offered me a PhD-position.” This meant that, due to his “sceptical disposition”, Karel “was able to demonstrate how, what was previously considered to be the status quo, was actually wrong.” Paul, Jaap, Stefan and Abel also partially linked their individualist epistemology and critical perspective to their scientific background, which is in engineering. Abel indicated that, as a process engineer, he is the “one who has to start from scratch.” This means he has to ask all the hard questions which requires him to be very critical. “At some point”, Abel said, “this [critical lens] unintentionally becomes a mindset that is automatically projected onto almost everything.” A similar story was told by Jaap, who indicated that, as an inventor

and engineer, he had the sole responsibility to “make sure the product worked”, which required him to be “highly critical of his own ideas.” Doing this full-time for 15 years, he relayed, “leads to the formation of a unique thinking pattern.” When applying this self-described analytical and objective lens to societal issues, Jaap “realised that, even if I knew nothing of the subject, I immediately performed a better analysis than that of the expert”.

Although not all respondents linked their individualist epistemology to their academic background, it was at least generally regarded to be part of a good scientific attitude. The main reason being that even the majority of scientists can be wrong sometimes and that in “science, the real science, the evidence is the only thing that counts.” (Stefan) To illustrate this principle, several respondents referred to prominent historical examples like Alfred Wegener (Martin, Karel, Jaap and Stefan), Albert Einstein (Martin, Paul, Bart and Jaap), Galileo Galilei (Bart and Jaap) and Milutin Milankovic (Martin and Jaap). Respondents argued that by “going against the consensus” these scientists “pulled history into a different direction.” (Martin) Jaap even regarded Wegener and Milankovic to be his “heroes”, because he “also feels that way. Like an outsider who tells different scientific disciplines: guys, you are looking at it in the wrong way.” This self-described ‘scientific scepticism’ combined with their earlier negative experiences with climate science, meant that most thus thought it unwise to blindly accept the conclusions of institutionalised climate science regarding climate change.

In sum, most respondents thus held an individualist epistemology. Unlike other groups commonly holding this epistemology, they do not centre this epistemology around spirituality or nature (Houtman & Aupers, 2007; Farias & Lalljee, 2008), but the modern scientific method and principles (cf. Ten Kate et al., 2020). In line with this disposition, most respondents are critical towards institutionalised climate science and the information it provides. This means that, among this group, one finds what the literature describes as a *science confidence gap* (Achterberg et al., 2017), meaning that respondents combined a strong affinity with the modern scientific method and principles with a critical stance towards institutionalised climate science.

4.3. Understanding the critique of institutionalised climate science

In an attempt to understand the existence of a science confidence gap among the scientifically literate, the theoretical literature has looked at theories of reflexive-modernisation (Beck et al., 1994). These theories suggest that scientific and other modern institutions instil a critical and reflexive attitude, which, in some instances, is used to critique the institution of science itself. However, these theories often remain in the realm of the theoretical, meaning that they are often not substantiated with empirical observations. For example, when exploring the notion of a science confidence gap among the population at large, previous quantitative research did not find any empirical substantiation for theories of reflexive-modernisation (Achterberg, 2015; Achterberg, et al., 2017). However, this

particular group of scientifically literate climate change critics, provides an excellent opportunity to see how a science confidence gap can be understood through the perspective of these theories on reflexive-modernisation. What happens when scientific scepticism is projected onto scientific institutions themselves? In the upcoming paragraphs, this research will demonstrate that this critique generally did not focus on the good or bad intentions of those active in climate science, but that the critique of institutionalised (climate) science mainly pertained to the systemic level.

4.3.1. “The Emperor’s new clothes”

The first common critique of institutionalised climate science regards the “highly politicised” (Abel) nature of the climate change issue, which is subsequently perceived to inhibit the freedom of scientific inquiry necessary for ‘good science’. This politicisation is exemplified by the international Kyoto and Paris Agreements, which are considered to be the primary drivers behind the energy transition. Besides this political emphasis, climate change also receives ample media and scientific coverage. In general, these authorities mainly communicate, what the respondents considered, an ‘alarmist narrative’, meaning this narrative conveys that climate change is manmade, problematic and needs to be prevented by minimizing fossil fuels and implementing sustainable energy initiatives. This constant political and media emphasis on ‘catastrophic anthropogenic global warming’ means that the ‘alarmist narrative’ has become so “voluminous” (Stefan) that the “[climate change] cart is already rolling” (Abel) and that we have become stuck in a “climate fyke.” (Dennis) In this sense, the ‘alarmist narrative’ is comparable to a Gramscian hegemony (1990) [1971], meaning that the leading authorities constantly reaffirm the perception of climate change as problematic, which leads it to become a tacitly accepted ‘societal truth’ or “common sense”. According to my respondents, this ‘climate change hegemony’ inhibits the inquisitive freedom of institutionalised climate science in various ways.

The first force inhibiting the inquisitive freedom of institutionalised climate science is the notion of political agenda-setting (McCombs, 2005). Climate science, just like most scientific disciplines, depends on external funding. Oftentimes this funding is provided by the government in the form of grants. Since the ‘climate change hegemony’ has “labelled [climate change] as important and urgent a lot of funding is allocated [to climate science research.]” (Abel) This, according to Martin, means that “the huge quantity of climate change reports have essentially become a business model. [...] If you mention the word [climate change or CO2 reduction] in your grant proposal, you are more likely to get the grant than when you do not.” Since researchers are dependent on grants to sustain their professional existence, researchers likely realise: “hey, if I shout that it is getting warmer, I get financed to do my research.” (Tom) In line with the saying “who pays the piper calls the tune” (Bart), this agenda-setting resultant from the ‘climate change hegemony’ is thus perceived to push research into a certain ‘alarmist’ direction and so inhibits the inquisitive freedom of institutionalised climate science.

The opposite tendency was also observed, meaning that those researchers who do not follow the ‘climate change hegemony’ “can be sure of one thing and that is that the money stops coming.” (Paul) The reason for this, some respondents indicated, is that the ‘climate change hegemony’ does not allow the ‘status quo’ to be disrupted by dissidents. To illustrate this point, respondents frequently referred to international examples like Roger Pielke Jr., Bjorn Lomborg, Susan Crockford and Judith Curry, who all received public and scientific backlash for their critical or alternative stance on climate change. When talking about Lomborg, Dennis relayed how, after the Danish government “did not want to finance [Lomborg] anymore”, due to his critical stance on the economic feasibility of renewable energy initiatives, Lomborg was invited by the Australian prime minister to work at the John Cooke University. However, “scientists at the John Cooke University started a petition and a revolt: we boycott Bjorn Lomborg! And it [Lomborg’s arrival] fell through. [...] It is ludicrous! [...] Everyone who does not completely conform to the narrative is forcefully kicked out.” Karel had a more personal story illustrating the politicisation of the climate change issue and how this perceivably inhibited scientific freedom. Ten years ago, he advised his wife’s cousin “to study geology.” He described how they often talked and how his wife’s cousin also “had quite a critical perspective on climate change.” However, when his wife’s cousin “expressed his critical perspective [in university] [...] others did not appreciate it. It got demonised.” This led his wife’s cousin to stop “with his study, because he could not take the politically correct anti-climate change sceptic atmosphere anymore.” This led Karel to conclude that “political correctness also crept into the exact sciences”, which he found a “dangerous development.” For most respondents, these examples pointed to a lack of scientific freedom within universities and so substantiated their reservation towards the conclusions of institutionalised climate science. As Dennis straightforwardly summarised:

“[When talking about problematic climate change and the energy transition,] I often refer to the fairy tale ‘The Emperor’s new clothes.’ This is a situation where everyone can see that the Emperor is not wearing any clothes, but no one surrounding the Emperor dares to say it out loud. You need to revere the Emperor, because then you guarantee yourself a pleasant existence, you have a nice income, a nice job. But if you go against the Emperor and say: ‘but Emperor you are not wearing any clothes!’ Well, then you get thrown in the deepest dungeon and your career is over.”

In this sense, the politicisation of the climate change issue is thus perceived to inhibit scientific freedom by demonising perspectives that do not align with the ‘hegemonic’ narrative of climate change concern.

4.3.2. “There are sources, but you may never question them”

A second critique of institutionalised climate science is that, through path-dependency, the freedom of scientific inquiry is perceived to be inhibited. One of the pillars of institutionalised science is the

concept of “standing on the shoulders of giants”, meaning that ‘good science’ should be a continuation of well-established scientific knowledge. By embedding one’s research in past research, one contributes to the progression of scientific knowledge. Institutionalised science thus generally regards this principle to be a strength. However, several respondents indicated that, in some cases, it can also be a weakness, since it can lead to the uncritical acceptance of fairly nuanced or even faulty science as ‘true’. Dennis and Abel, for example, argued that the concept of “standing on the shoulders of giants” leads to the uncritical acceptance of unreliable and unrealistic climate model projections. They indicated that the umbrella term ‘climate science’ is made up of “a multitude of disciplines” (Abel) and that each climate scientist only occupies a “small island.” (Dennis) Concerning their own island, they are all fairly “nuanced and critical.” However, “what happens outside of their island, they trust blindly.” (Dennis) Then they argue: “well, my colleague in this or that discipline is saying that it works like this, [...] so I will build on his hypothesis.” (Abel) This, for them, explains the prevalence of the dominant, but unwarranted, notion that contemporary climate change is highly problematic.

Besides being observed to unwarrantedly perpetuate the notion of ‘catastrophic global warming’, it was also perceived to lead to the creation of a ‘scientific dogma’ around anthropogenic global warming. This was illustrated by Martin, who, although he believed in the warming effect of greenhouse gas emissions, indicated that natural factors were predominantly responsible for contemporary climate change. When talking about the available information about climate change, Martin indicated that a lot of sources do “not start at the beginning.” According to Martin, the foundation of the greenhouse gas emission story is a scientist called Svante Arrhenius. However, Arrhenius “partially corrected his own theory. When you ask: how did Arrhenius come to this correction? [...] Almost everyone remains silent.” Besides, when Martin asked if Arrhenius’ study was ever replicated in a laboratory, he found out that “this did not happen.” This led him to conclude that, apparently, “there are sources but you may never question them.” Jaap and Bart indicated that path-dependency and the subsequent creation of dogma have always occurred in science. Where Bart used the example of Galileo’s trial, Jaap referred to the example of Alfred Wegener, who came up with the continental drift-theory back in 1912. Although Wegener’s theory was ‘factually correct’, Jaap expounded, his idea was met with ridicule and wide dismissal from the scientific community, because it fell outside the range of conventional scientific explanations. Jaap indicated that he saw this same tendency of demonising alternative and unconventional perspectives in institutionalised climate science and scientific institutions in general.

For Jaap, this path-dependency and subsequent ‘demonisation of the alternative’ was a serious indictment to today’s universities and scientific institutions. Today’s student, according to Jaap, is “like a sponge” who is filled with “facts” and a “certain idea about reality. [...] After 20 years of education, six years in university and three years promotion” the student is “completely filled with existing science, which makes it impossible to make the step of: hey, but it does not work like that.”

Besides, instead of cherishing critical and alternative perspectives, scientific institutions are perceived to actively silence them. This was again illustrated by referring to prominent international examples. Peter Ridd, for example, was perceived to be fired from academia due to his unconventional perspective on the effect of climate change on the Great Barrier Reef in Australia. This perceived academic intolerance towards the critical perspective also became manifest in the warnings some respondents made towards me, the researcher, and my pursuit of understanding the perspective of the scientifically literate climate change critic. Karel indicated that he “worried if I could honestly write my thesis without it influencing the grade at the end.” If the research were to find that, “in general, [climate change critics] are very reasonable people” then I “might get a problem with the university.” This shows how some respondents thought that the concept of path-dependency, which is inherent to the scientific pursuit, inhibited the scientific freedom of climate scientists, because deviation from the well-trodden path of problematic global warming was perceived to not be without consequences.

4.3.3. “I define myself as a climate optimist and the others are the climate pessimists”

The third perceived inhibitor of free inquiry in institutionalised climate science was an observed negativity bias inherent to the climate change debate. This negativity bias, according to some respondents, extended beyond institutionalised science, but also affected other institutions like politics and the media. The media, for example, was generally perceived to be one-sided and pessimistic (Martin, Abel, Karel, Lucas and Stefan). This, according to Paul, could be explained by the negativity bias inherent in journalism.

“The story that sells best is a negative one. [...] If people on the news tell us that everything is fine and that today the weather was great for having a drink outside [...], everyone watching thinks: okay, it is fine, let us turn it off.”

One frequently mentioned example of ‘positive climate news’ that is not covered by the media is the concept of ‘global greening’ resultant of increased CO₂ emissions (Karel, Jaap, Lucas and Martin). Abel, for example, indicated that, every million years, nature permanently removes a chunk of CO₂ from the atmosphere. This natural removal of CO₂ from the atmosphere might be a problem in the long run, because current estimates indicate that in “around 5 to 10 million years we might reach the critical threshold, which means that plants will not grow.” However, due to human emissions, atmospheric carbon dioxide has increased, meaning that “we have extended Mother Earth’s life expectancy by millions of years.” But, due to the one-sided and negative coverage of climate change, “[such a positive climate change notion] will, of course, not reach the frontpage of a newspaper.”

Some respondents also observed such an inherent negativity bias in (climate) science. When talking about the prevalence of “high emission scenarios” in climate science, Winand indicated that these scenarios make for “nice calculations [...] and] clear-cut answers.” This incentivises climate modelers to use these “high emission scenarios”, because “then you have a real result, you have

something that can be published. [...] If I have an interesting story, it gets on the frontpage of Nature!” Karel indicated that a focus on the negative is central to the pursuit of science. “Researchers study a problem. They do not start with: what are the advantages of CO₂? No, they start with a problem.” To illustrate this point, he referred to a small Google-experiment he conducted where he combined animals that we regard to be useful or aesthetically pleasing, like “butterflies, bees and polar bears” with the term global warming. “Most articles argue that these animals will struggle. Their numbers will dwindle or they will not be able to migrate.” He thought this to be weird, since the effect of change “should be somewhat fifty-fifty. For some it is good, for others it is bad.” To contrast his first search, he combined animals that we regard useless or aesthetically displeasing, like “cockroaches and jellyfish”, with the term global warming. “All these animals were found to flourish [due to global warming]! [...] For him, this illustrated “how academics engaging in research focus on threats instead of benefits.” Karel indicated that this focus on the negative is not surprising. “You only get [financial] support if you aim to solve a problem. [...] If you say: I want to study how bees and butterflies thrive due to global warming. People say: okay, that is great! We do not have to finance this pursuit, because everything is fine.” Besides, Karel indicated that this negativity bias was central to the essence of the scientific pursuit: “the word problem statement says it all. Searching for problems is the modus operandi of academia.” This, for Karel, led to a “tunnel vision, a narrowing of the mind.” For him, this “explained the widespread alarm about global warming” in academia. In this sense, just like politicisation and path-dependency, the negativity bias inherent in (climate) science was perceived to inhibit the freedom of inquiry of institutionalised climate scientists.

4.3.4. “That is not science anymore, it is gambling”

The fourth and final common critique of institutionalised climate science does not regard a lack of freedom of inquiry, but is aimed at a specific area of climate science, namely climate modelling. This specific critique commonly pertained to a specific group within the pool of respondents, namely the engineers. Throughout the interviews, several engineers pointed out how an education in engineering differed from other forms of academic education. In engineering, Paul argued, you cannot “just do a little philosophising, like it is probably this or that.” No, engineering is an “applied science”, which means that science should be practical, “because if it does not work, well, it does not mean anything.” The same sentiment was communicated by Jaap, who stated that “science is only something when engineers have looked at it and have come up with a practical application. Only then do we have applied science that is useful.” This emphasis on practicability means that these engineers placed a strong emphasis on accuracy and reliability to prevent “[one’s bridge from] collapsing when you drive over it with a truck.” (Paul)

This engineering-emphasis was subsequently used to substantiate their critique of climate models. Within the climate sciences, climate models are designed to try and predict the future global climate. However, the outcomes of these models differ depending on the included parameters and the

degree of positive or negative feedback that is modelled. This leads climate models to display a variety in outcomes. Besides, some respondents observed the model projections to be more dramatic than the observations. This led Jaap to conclude: “if you are an engineer, these models don’t make any sense!” Stefan shared this sentiment and relayed a personal experience with modelling to illustrate his point. He and a few colleagues once modelled the bottling process of a certain product. “We had mapped everything, made our model, beautiful, no way that it could go wrong!” However, when the bottling started, the model nevertheless proved inaccurate. What happened? The substance deliverer had added one small chemical that neutralised the effect of another without telling them. Although its effect was thus not visible, it nonetheless ruined the bottling procedure. “[There was only] one small thing we did not know and it did not work.” This knowledge combined with the wide variety of climate models and their perceived inaccuracy led him to conclude that these models are not scientific, in the sense that their validity and reliability are too low. “If, as an engineer, you build a bridge with a factor of 1 to 3, well, it collapses or you make it thrice as heavy. That is not science anymore, it is gambling.”

To explain why climate modelers nonetheless stood by their ‘unscientific’ models, Paul and Stefan again pointed out the difference between engineers and climate scientists. Climate modelers are “relatively free to [...] make their predictions” (Paul), since they “predict [the future climate of] the coming 30, 50, 100 years [...] they cannot be held accountable for them.” (Stefan) This, according to Stefan, leads to a certain “complacency.” Engineers, however, cannot afford such ‘complacency’, because if “you make a wrong calculation while building a bridge and it collapses you are held accountable.” (Stefan) This background in engineering plus the observed missing accuracy-induced incentive in climate modelling to be ‘ruthlessly critical’ of one’s own model, so formed a point of critique towards institutionalised climate science and its occupants.

5. Conclusion and discussion

Through conducting online in-depth interviews, this research created an in-depth ‘*Verstehen*’ (Weber, 1978 [1956]) of criticism towards institutionalised climate science among the scientifically literate in the Netherlands. Commonly indicating a specific event that instigated their critical perspective on climate change, respondents typically shared an ostensibly contradictory position. On the one hand, they ascribed great importance towards the modern scientific method and principles, but, on the other, they adopted a critical stance towards institutionalised climate science. To understand this science confidence gap (Achterberg et al., 2017), this research first described how most respondents held an individualist epistemology (Harambam & Aupers, 2015; Houtman & Aupers, 2007; Van Zoonen, 2012), meaning that they regarded the individual as central to obtaining knowledge and determining what is true. They centred this epistemology around the modern scientific method and principles (Ten Kate et al., 2020), as illustrated by their gathering and evaluation of information (e.g. triangulation, preferring ‘raw’ data, emphasizing methodological transparency) and how they commonly regarded such an individualist and critical disposition to be part of a ‘good scientific attitude’. Most respondents

thus found it unwise to blindly accept the ‘general’ conclusions of institutionalised climate science. However, this ‘scientific scepticism’ was not only applied to the information provided by climate science, but also to institutionalised climate science itself, which is in line with theories on reflexive-modernisation (Beck et al., 1994). This research substantially improved our empirical understanding of these theories of modern-reflexivity by providing an in-depth insight of what happens when the lens of ‘scientific scepticism’ is projected onto the institution of science itself. The first three general points of critique referred to a perceived lack of freedom of inquiry in institutionalised climate science. This inquisitive freedom is perceived to be inhibited by (1) the politicisation of the climate change issue, (2) institutional path-dependency and (3) the negativity bias inherent in the scientific endeavour. The final criticism of institutionalised climate science generally pertained to a subset of the respondents, namely the engineers, and regarded the ‘unscientificness’ of climate models, since they would not survive the scientific rigour applied in engineering.

The first contribution of this research is that it provides an in-depth understanding of critique of institutionalised climate science among a group that generally displays a high degree of climate change concern, namely the scientifically literate (Guy et al., 2014; Hoekstra, 2020; Hornsey et al., 2016; Kvaløy et al., 2012; Lewis et al., 2019; Tranter & Booth, 2015). Examining “reality through their eyes” (Hochschild, 2016, p. 5), helped us understand their seemingly paradoxical science confidence gap – trust in the modern scientific method, but a reservation towards institutionalised climate science. In fact, ‘healthy scepticism’ towards climate change information provided by institutional climate science was generally regarded to be the cornerstone of a good scientific attitude, especially when said science had perceivably erred in the past. This showcases how a group that in the literature is often described as ‘pseudo-scientific’ (e.g. Hansson, 2017), perceives itself to be the exact opposite. In fact, due to a perceived lack of scientific freedom and the perceived absence of sufficient scientific rigour with regards to climate models, they often argued that those active in institutionalised climate science were the one’s not able to meet the standards of the modern scientific method and principles.

The second contribution of this research is of a more theoretical nature and regards the empirical substantiation of theories of modern-reflexivity when understanding the science confidence gap among the scientifically literate. These theories argue that scientific institutions provide individuals with a critical lens, which is then subsequently projected onto scientific institutions themselves. Until now, these theories have remained in the realm of the theoretical. In fact, previous quantitative research exploring the existence of a science confidence gap among the population at large found that theories on anomie instead of modern-reflexivity were better suited to understanding the science confidence gap, because this science confidence gap mainly existed among the less educated (Achterberg, 2015; Achterberg et al., 2017). This group of respondents thus provided the perfect sample to see what happens when the lens of ‘scientific scepticism’ is projected onto

institutionalised science. This research has illustrated how their critique of institutionalised climate science predominantly pertains to the systemic level and most often regarded a perceived lack of freedom of inquiry. This meant that, predominantly, the ‘problem’ with institutionalised climate science was not a group of ‘malevolent’ or ‘elitist’ scientists deliberately trying to hoodwink the public, but that climate scientists were perceived to be caught in a stream that, propelled by mechanisms of politicisation, path dependency and negativity bias, pushed them towards the conclusion that climate change is manmade and problematic.

This theoretical contribution illustrates the utility of the abductive approach for explorative research designs (Tavory & Timmermans, 2012). Offering an alternative to inductive and deductive analysis, the adoption of the abductive approach led to the empirical substantiation of a prominent theoretical concept. Besides, this research also showcased how abductive analysis is not a return to deduction. Although for other climate change critics distrust in institutionalised climate change can be understood as part of the ongoing ‘culture war’ (Hoekstra, 2020), this sensitising notion proved less relevant for this particular group of respondents. Although some acknowledged the politicised and sensitive nature of the climate change debate, it did not form the foundation of their critical perspective on climate change.

Although this research substantially contributed to our theoretical understanding of a science confidence gap among the scientifically literate, it is important to place an important caveat at the external validity of this research. To find scientifically literate climate change critics, this research used *Climategate* (<https://www.climategate.nl/>) as a recruiting platform. This means that all respondents were either active on the platform or were suggested by someone who was active on the platform (snowballing). It might be that those active on *Climategate* constitute a more outspoken minority or a ‘bubble’ and that other more-educated climate change critics critique institutionalised climate science for different reasons than outlined in this research. In order to determine if these critiques of institutionalised climate science extend beyond this particular group of respondents, further quantitative research is required. This can, for example, be done by translating the four critiques set forth by this research into Likert scale questions. A quantitative study among a larger pool of scientifically literate climate change critics can subsequently determine the external validity of these critiques.

The second recommendation for future research ties into the theoretical contribution of this research. In their recent book “*Science under siege: Contesting the secular religion of Scientism*”, Houtman, Aupers, and Laermans (2020) showcase how processes of modernisation and the subsequent erosion of traditional institutions like the Church, have not necessarily led to an unprecedented ‘age of Scientism.’ Instead, scientific institutions and their ‘claim to truth’ seem to be more publicly contested than ever. The authors, therefore, invite cultural sociologists to try and better understand the cultural

underpinnings of this critique on science. By illustrating what happens when ‘scientific scepticism’ is projected onto scientific institutions themselves, this research has highlighted one of these cultural underpinnings of scientific distrust. For future research, it would be interesting to see if these particular critiques of institutionalised science extend beyond the issue of climate change. An example could be critique of medical science among vaccine critics. Although previous research provided an in-depth understanding of vaccine criticism among the more educated and indicated that this could be partially understood through theories of modern-reflexivity (Ten Kate et al., 2020), it did not elaborate on what these critiques were. It would be interesting to see how their critiques compare to the critiques outlined in this research. By building on this research and others (e.g. Harambam & Aupers, 2015), future research will further improve our understanding of critique of scientific institutions among critical groups in contemporary Western societies.

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Appendix I. First contact

Beste organisatie van Climategate.nl,

Ik ben Sem Oosse, student cultuursociologie aan de Erasmus Universiteit Rotterdam. In tegenstelling tot veel andere onderzoekers, ben ik als cultuursocioloog geïnteresseerd in hoe mensen *zelf* over betwiste maatschappelijke kwesties denken.

Voor mijn masterscriptie zou ik graag onderzoek doen naar waarom sommige mensen twijfelen aan of kritisch zijn over de mainstream klimaatwetenschap, het politieke klimaatdebat en/of het klimaatbeleid. Mijn doel hierbij is om door middel van interviews de ideeën en opvattingen van mensen zelf centraal te stellen.

Hier heb ik uw hulp bij nodig.

Uw website en Facebookpagina bieden een platform aan mensen die twijfelen over de betrouwbaarheid en validiteit van de mainstream klimaatboodschap. Het plaatsen van een oproep op uw website en/of Facebookpagina zou mij enorm helpen om met deze mensen in contact te komen.

Zou u mij daarbij willen helpen door mijn oproep op uw website en/of Facebookpagina te plaatsen? In de bijlage vindt u de inhoud van deze oproep.

Mocht u meer informatie willen over de inhoud van het onderzoek, dan kunt u mij bereiken via 511440so@eur.nl. Ik wil nogmaals benadrukken dat het absoluut niet mijn intentie is om mensen te bekritisieren. Als cultuursocioloog ben ik voornamelijk geïnteresseerd in hoe mensen *zelf* denken over complexe maatschappelijke issues. In mijn optiek kan dit alleen door mensen *zelf* aan het woord te laten, in plaats van mijn onderzoek te baseren op de discussies die *over* hen gevoerd worden door de overheid, media en wetenschap.

Ik hoor graag van u of u deze oproep (zie bijlage) wil delen op uw website en Facebookpagina. Mocht u op-of aanmerkingen hebben over de inhoud van de oproep, neem dan vooral contact met mij op.

Alvast bedankt voor uw reactie!

Met vriendelijke groet,

Sem Oosse

Appendix II. Interview-invitation

Beste bezoekers van Climategate,

Ik ben Sem Oosse, student cultuursociologie aan de Erasmus Universiteit Rotterdam. Ik wil graag inzicht bieden in de redenen om te twijfelen aan of kritisch te zijn over de klimaatwetenschap en het klimaatbeleid. Als cultuursocioloog vind ik het belangrijk om *met* mensen te praten in plaats van *over* hen. Dat gebeurt in het geval van het klimaatdebat, naar mijn mening, nog veel te weinig.

Daarom zou ik graag online interviews houden die het karakter hebben van een open gesprek, gevormd door wat klimaatsceptici zelf vertellen. Dit betekent dat ik geen gebruik maak van een standaard enquête en dat ik mij niet laat leiden door het perspectief van de mainstream klimaatwetenschap, overheidsinstanties of de media; het draait echt om de opvattingen, ideeën en beweegredenen van klimaatsceptici zelf.

Als u iemand bent die schrijft voor Climategate, comments plaatst op artikelen, en/of de website regelmatig bezoekt, heb ik uw hulp nodig. Zou u willen meewerken aan mijn masterscriptie door middel van een online interview?

Vanzelfsprekend zal ik uw gegevens vertrouwelijk behandelen en in mijn onderzoek anoniem presenteren. Ik wil nogmaals benadrukken dat het niet mijn doel is om mensen te bekritisieren of te veroordelen. Mijn onderzoek is gegrond in de cultuursociologische benadering, waarin het perspectief van groepen mensen centraal staat. Mijn begeleider, prof. dr. De Koster (<https://www.eur.nl/nieuws/willem-de-koster-benoemd-tot-hoogleraar-algemene-sociologie>), deelt deze benadering. Ook wil ik benadrukken dat ik dit scriptieonderwerp zelf heb gekozen. Dit betekent dat, alhoewel ik officieel verbonden ben aan de universiteit, deze niet bepaalt wat ik onderzoek. Het onderzoek is echt volledig gebaseerd op uw opvattingen, ideeën en beweegredenen.

Als u mij bij mijn onderzoek wilt helpen door een interview te geven, wilt u mij dan mailen op 511440so@eur.nl? Ook als u vragen of opmerkingen heeft kunt u mij via dit emailadres bereiken. Mocht u geïnteresseerd zijn in de resultaten van het onderzoek, dan kan ik u deze uiteraard na afloop toesturen.

Met vriendelijke groet,

Sem Oosse

Appendix III. Form of informed consent

Ik wil u hierbij uitnodigen om deel te nemen aan het volgende onderzoek, met als werktitel *‘Wetenschappelijk-geïnformeerde klimaatscepsis in Nederland: Een kwalitatief onderzoek’*. Dit onderzoek dient als masterscriptie en wordt uitgevoerd door Sem Oosse, onderzoeksmasterstudent *Sociology of Culture, Media and the Arts* aan de Erasmus Universiteit Rotterdam. Het doel van dit onderzoek is om wetenschappelijk-geïnformeerde klimaatscepsis te begrijpen vanuit het perspectief van klimaatsceptici. Om deel te nemen aan dit onderzoek moet u 18 jaar of ouder zijn.

Het onderzoek wordt uitgevoerd aan de hand van online diepte-interviews. Mijn verwachting is dat een interview ongeveer anderhalf uur in beslag neemt. Echter, aangezien uw perspectief op het klimaatdebat centraal staat, wordt de uiteindelijke duur en het verloop van het gesprek grotendeels door u bepaald. Het interview heeft een open karakter, wat betekent dat dit onderzoek geen gebruik maakt van een vaste vragenlijst. Echter, om vergelijkingen tussen interviews te bevorderen, zijn er wel bepaalde overkoepelende thema’s (zoals klimaatwetenschap, klimaatpolitiek, klimaatbeleidsinitiatieven) die in elk interview aan bod komen.

Uw deelname aan dit onderzoek is volledig vrijblijvend. U zit nergens aan vast en u kunt uw deelname aan het onderzoek op elk moment stoppen, zonder dat dit voor u nadelige gevolgen heeft. Deze vrijblijvendheid geldt ook tijdens het interview, wat betekent dat u het interview op elk moment kunt beëindigen. Als u zich na afloop van het interview wilt terugtrekken uit het onderzoek worden uw persoonsgegevens verwijderd. Eventuele volledig geanonimiseerde informatie kan wel alsnog worden verwerkt.

Uw veiligheid en privacy zijn voor mij van groot belang. Gezien de huidige pandemie zullen de interviews helaas online plaatsvinden. Om uw en mijn privacy te waarborgen zal het gesprek plaatsvinden op *Zoom* of *Microsoft Teams*. De reden hiervoor is dat de Erasmus Universiteit Rotterdam samenwerkt met deze platforms, wat betekent dat de cyberveiligheid van deze platforms groter is dan die van andere. Om ervoor te zorgen dat uw verhaal goed kan worden geïnterpreteerd wordt het geluid van het interview opgenomen en getranscribeerd (woord voor woord uitgeschreven). Bij het maken van de transcriptie zullen uw persoonlijke gegevens worden geanonimiseerd en uw voornaam gepseudonimiseerd. De audio-opname en het transcript zullen veilig worden opgeslagen op de online drive van de Erasmus Universiteit (*SURFdrive*) en de wachtwoordbeveiligde harddrive van de onderzoeker. U heeft het recht om het transcript van uw interview in te zien (dit kan u op verzoek digitaal toegestuurd worden).

Ik beloof dat de informatie verzameld tijdens het interview alleen wordt gebruikt voor wetenschappelijke doeleinden. Alhoewel dit onderzoek dient als masterscriptie, bestaat de mogelijkheid dat deze scriptie de basis vormt voor een wetenschappelijk artikel en/of een publicatie voor een niet-wetenschappelijk publiek. Hierbij is het echter van belang om nogmaals te benadrukken

dat deze producten op geen enkele manier naar u te herleiden zijn. Mocht u geïnteresseerd zijn in de uitkomsten van dit onderzoek kan ik u natuurlijk de uiteindelijke resultaten van mijn scriptie doorsturen.

De data (opnames, transcripten) zullen maximaal 10 jaar bewaard worden in een beveiligde omgeving nadat de scriptie is goedgekeurd. Mijn begeleider, prof. dr. Willem de Koster, en ik hebben toegang tot deze bestanden. Alleen de geanonimiseerde transcripties kunnen gedurende die periode voor wetenschappelijke doeleinden met anderen worden gedeeld. Een commissie die toezicht houdt op de integriteit van wetenschappelijk onderzoek kan toegang krijgen tot de opnames en de transcripten.

Voor vragen en zorgen over privacy kunt u terecht bij de databeschermingsdienst van de Erasmus Universiteit, te bereiken op privacy@eur.nl.

Als u akkoord gaat met de gestelde voorwaarden in dit toestemmingsformulier, kunt u contact met mij opnemen via de mail. Een simpele 'ja, ik ga akkoord' volstaat. Hetzelfde geldt als u natuurlijk vragen hebt over het onderzoek. Via de mail ben ik 24/7 bereikbaar en ik probeer mails binnen een dag te beantwoorden.

Sem Oosse



511440so@eur.nl

Appendix IV. Excerpt explorative content analysis

Design

In order to get a grasp of how climate related topics are discussed on *Climategate*, a small explorative qualitative content analysis is conducted. This qualitative content analysis aims to discern the general themes in the article and the comments. Via purposive sampling, three articles are selected. These articles are all fairly recent and have more than 100 comments. Furthermore, to ensure a wide array of topics, this research has selected articles on climate science, climate politics and climate policies.

Article 1: Stop het verval van de democratische rechtsstaat (climate politics)

The article discusses an interview with prominent Dutch climate sceptic Guus Berkhout. He has recently written a book which critiques Dutch politics. According to Berkhout, Dutch politicians miss rational intelligence and empathy. This is showcased by their inept interpretation of scientific models (among other things, climate models). He has started a petition to make the government aware of the discontent within Dutch society (among other things, the energy transition).

The comments (115):

- A direct democracy via referendums à la Switzerland. Current government is not ‘for the people’, but infiltrated by lobbyists.
- Politicians and government officials are inept, incapable and corrupt.
- People are not necessarily opposed to the idea of democracy, but more the incumbents of government.
- Discussion on ‘woningnood’ and the role of migrants. Several commenters critique Guus Berkhout’s calculations of the amount of asylum seekers entering the Netherlands. These critiques are not downvoted into oblivion. There are, however, those who defend Berkhout by stating that the statistics of the CBS cannot be trusted due to illegal immigration and a leftist ideological bias. These arguments align with more radical right-wing political ideologies.
- *Memo*: There was a lot of discussion (agreeing and disagreeing with the author) and there were different viewpoints on climate change. Some people believed that human’s have no effect on the changing climate, others believed they did, but did not agree with climate politics. Those that did believe in anthropogenic climate change were systematically downvoted, which shows that scepticism with regards to anthropogenic climate change is probably more common on the website.

Source:

<https://www.climategate.nl/2021/03/stop-het-verval-van-de-democratische-rechtsstaat/>

Article 2: Gemeente start met ‘windgesprekken’ over turbines of Harselaar Barneveld (climate policy)

Ap Cloosterman sent a letter with suggestions to the municipality of Barneveld regarding their energy transition strategy. It is a very polite letter with a very polite reaction by the municipality and the way they think about renewable energy. Ap Cloosterman gives suggestions on 'geothermie' (transporting residual warmth), solar panels, wind turbines, 'warmtepompen', isolation and nuclear energy. The municipality agrees with most of the recommendations proposed by Cloosterman.

The comments (154):

- 'Warmtepompen' are horribly inefficient
- Gas is a good source of energy
- Making all houses can sustainable is not economically feasible (old houses)
- Bio-mass is a 'leftist lie', which is in fact horrible for the environment
- Nuclear energy is a cheap and safe alternative to expensive and unsafe solutions like wind-energy. Argument is that, due to stress, people living near wind turbines are more likely to experience stress and a lowering living standard. This is fiercely debated though, with one commenter stressing that nuclear energy is way more dangerous than wind-energy. However, since these counter-points get downvoted and pro-nuclear energy comments are upvoted, most people on the platform are in favour of nuclear energy.
- People working at municipalities lack scientific knowhow due to their Alpha-background. They also prefer emotions over rationality.
- *Memo:* There are a few dominant voices on the platform. Although there are around 150 comments, my estimation is that there are only around 25 commenters on the article.
- *Memo:* As with the first article, politicians and government officials are regarded as inept and untrustworthy.

Article:

<https://www.climategate.nl/2021/03/gemeente-start-met-windgesprekken-over-turbines-op-harselaar-barneveld/>

Article 3: Wanneer komt nu toch die verschrikkelijke klimaatcrisis (Climate science)

Very short article. It discusses how the continuing greenhouse gas emissions have not led to a higher temperature over the last 5 or so years. Global temperatures even decreased by 0,5 degrees Celsius. Are these findings indicative of a cooler period?

Interesting detail: the article starts with: you will not find this in the traditional media, implying that there is a 'state of environmental concern' which is upheld by institutions like the media.

The comments (120):

- General consensus: natural processes are more responsible for current climate change than man-made processes. Within this belief, there are several camps. Some argue that greenhouse

gases do have an effect, but believe that this is negligible compared to natural processes.

Others argue that man-made processes have no effect at all.

- There is also a difference between sceptics in favour of and opposed to an energy transition. Some argue that the energy transition is smart, because we are running out of fossil fuels. Others argue that the finite amount of fossil fuels is exaggerated and that the current renewable options are unfeasible and inefficient.
- Distrust in climate science because of wrong projections. According to the article and several commenters, the catastrophic events expected to have already happened have not occurred.
- Distrust in climate science because of 'prophesies of doom'. The disastrous consequences of climate change are wildly exaggerated and used to instill fear. This fear is then exploited by companies and politicians for money and power.
- *Memo*: Small discussion on ABN. Someone commented something with four spelling mistakes and was subsequently outed (important to maybe reread my invitation on spelling mistakes).
- *Memo*: Although the article was on climate science, a lot of the comments still focused on climate politics and policies.

Article:

<https://www.climategate.nl/2021/03/wanneer-komt-nu-toch-die-verschrikkelijke-klimaatcrisis/>

Appendix V. Preliminary topic list

Below the general topics discussed during the interviews are presented. The topics and questions are constructed keeping two aims in mind: letting the respondents talk about their views on climate change and to explore certain sensitising notions. The fact that this research centres on the respondents means that the flow of the discussion is largely determined by the respondent. This means that this topic list should not be read as a rigid and chronological questionnaire, but as something that assists the researcher in preparing for and during the interviews.

<i>Topics</i>	<i>Potential questions</i>	<i>Justification</i>
Klimaatovertuigingen	<ul style="list-style-type: none"> - Wat zijn je persoonlijke overtuigingen over klimaatverandering? (bestaat niet, bestaat wel maar mens is niet hoofdverantwoordelijke, mens is hoofdverantwoordelijke maar optreden is zinloos, etc.) - Sinds wanneer denk je zo over klimaatverandering? Had je ooit een andere mening? Zo ja, hoe is deze verandert? Hoe vond deze verandering plaats? Was dit abrupt of geleidelijk? Kun je het moment bedenken dat je voor het eerst dacht: hier klopt iets niet? - Heb je altijd al interesse gehad in dit onderwerp/vraagstuk? Zo ja, hoe komt dit? Zo nee, wat wekte je interesse? Wat valt jou vooral op aan het klimaatdebat? Waar gaat jouw aandacht naar uit? 	<p>Werkt als inleiding. Klimaatscepticisme is geen eenduidig begrip. Voordat we het hebben over klimaatwetenschap, politiek en beleid is het belangrijk om vast te stellen wat de persoonlijke overtuigingen van de respondent zijn op dit gebied. Om een diepgravend begrip te creëren is het ook belangrijk om de context van deze overtuigingen te begrijpen.</p>
Klimaatwetenschap: Mainstream boodschap	<ul style="list-style-type: none"> - Artikelen die ik heb gelezen beweren dat er consensus bestaat binnen de klimaatwetenschappen over de rol van de mens in klimaatverandering, hoe kijk jij daar tegenaan? - Sinds wanneer denk je hier op deze manier over? Was er ooit een moment dat je die consensus geloofde? Zo ja, wat zorgde ervoor dat je mening veranderde? Zo nee, waarom niet? Eerdere ervaringen met de mainstream klimaatwetenschap? Eigen onderzoek? Andere oorzaak? - Waarom denk jij dat de klimaatwetenschap dat idee van consensus uitdraagt? Wat zijn de motieven hierachter? Waarom denk je dat (persoonlijke ervaringen met klimaatwetenschappers, eigen rekensommen/literatuuronderzoek)? Kun je een gebeurtenis of voorbeeld bedenken waarvan jij denkt: dit illustreert/onderbouwt mijn kijk op de mainstream klimaatwetenschap? 	<p>De mogelijke vragen en de voorbeelden zijn gebaseerd op de initiële noties van motivated reasoning, anti-institutionalisme en reflexive-modernisation en de exploratieve kwalitatieve contentanalyse. Hieruit kwam naar voren dat de betrouwbaarheid, integriteit en kunde van klimaatwetenschappers vaak in twijfel wordt getrokken door auteurs en commenters op Climategate.</p>

	<ul style="list-style-type: none"> - Maak je je weleens zorgen om de staat van de klimaatwetenschap? Waar maak je je vooral zorgen om en waarom? Waar liggen kansen? - In het geval van het klimaatdebat ben je het dus oneens met/kritisch over de veronderstelde klimaatconsensus van de mainstream klimaatwetenschap. Twijfel je ook aan de wetenschappelijke consensus op andere gebieden? Ben je het vaker oneens met wetenschappers? Zo ja, welke en waarom? Zijn de redenen hiervoor vergelijkbaar met jouw kijk op de klimaatwetenschap en klimaatwetenschappers? Zo nee, wat maakt de klimaatwetenschap uniek? - Hoe verschillen jij/andere wetenschappelijk-geïnformeerde klimaatsceptici van mainstream wetenschappers? Wat heb jij/hebben jullie wat mainstream klimaatwetenschappers niet hebben? Hoe komt dat denk je? 	
Klimaatwetenschap: Vinden van betrouwbare bronnen	<ul style="list-style-type: none"> - Waar vind je betrouwbare informatie over klimaatverandering? Hoe heb je deze informatie gevonden? Zelf naar onderzoek gegaan, aangeraden door een bekende? - Hoe beoordeel je de kwaliteit van deze informatie? Hoe filter je goede van slechte informatiebronnen? Waar let je vooral op (auteur, inhoud)? - Wat vind je interessantst op/het beste aan Climategate en andere klimaatsceptische websites? Wat vind je het minst interessantst op/het minste aan Climategate en andere klimaatsceptische websites? - Praat je weleens met anderen over wat voor bronnen wel en niet te vertrouwen zijn? - Hoe lees jij de informatie op Climategate en andere klimaatsceptische websites (kritisch of slechts informatief)? Ben je het weleens oneens met bepaalde stellingen of beweringen in de artikelen of de bijbehorende comments? Zo ja, hoe reageer je hier dan op? Kun je een voorbeeld bedenken? Zo nee, wat maakt de informatie op deze websites wel betrouwbaar vergeleken met de mainstream klimaatwetenschap? 	Als het blijkt dat de respondent de mainstream informatie niet vertrouwd, is het belangrijk om te achterhalen waarom hij/zij de alternatieve boodschap wel vertrouwd. Dit onderwerp is gebaseerd op de initiële notie van reflexive-modernisation theory.
Klimaatactivisme: Sociale groepen	<ul style="list-style-type: none"> - In de media en bepaalde polls wordt vaak beweerd dat klimaatbezorgdheid hoog is in Nederland, hoe kijk jij daar tegenaan? 	Geïnspireerd door de initiële notie van motivated-reasoning.

	<ul style="list-style-type: none"> - Hoe komt het denk jij dat zoveel Nederlanders bezorgt zijn om het klimaat? Als je niet gelooft in deze wijdverspreide bezorgdheid, waarom wordt dan toch de schijn gewekt dat zoveel Nederlanders zich druk maken om klimaatverandering? Wie zit hierachter en wat zijn hun motieven? Kun je een voorbeeld of gebeurtenis bedenken dat illustratief is hiervan? - Hoe vind je het beeld van klimaatsceptici/mensen zoals jij in de media? Klopt dit beeld? Waarom wel, waarom niet? Als dit beeld niet klopt, wat voor gevoel geeft dat? Waarom portretteert de media klimaatsceptici op deze manier? Heb je het idee dat het klimaatsceptische geluid voldoende wordt gehoord door de media? Waarom wel, waarom niet? - Heb je weleens dat mensen het oneens zijn met jouw kijk op klimaatverandering? Zo ja, wat voor soort mensen zijn dat? Hoe denk jij dat deze mensen over jou denken? Wat voor gevoel heb je bij dat soort mensen? Hoe verschillen jij/andere gebruikers van Climategate van dit soort mensen? Verschillen jullie op nog meer punten van elkaar? 	
<p>Klimaatpolitiek: Politieke reactie op klimaatverandering</p>	<ul style="list-style-type: none"> - Wat denk je van Nederlandse politici en partijen, begrijpen zij klimaatverandering voldoende, waarom wel, waarom niet? Zijn er bepaalde politici of partijen waarvan jij denkt dat zij klimaatverandering beter snappen dan andere en, zo ja, wie? Zijn er ook politici of partijen die het helemaal niet snappen? Wat kenmerkt zulke politici of partijen? Waarom denk jij dat bepaalde politici en partijen zich zo druk maken om klimaatverandering? Wat zijn hun motieven? - Voel jij je als klimaatkritische burger serieus genomen door de politiek? Hoe denk jij dat politici naar jou kijken? Waarom kijken ze zo naar jullie? Wat voor gevoel geeft dat? - Hoe verschillen jij en andere Climategate gebruikers van dit soort politici? Wat hebben mensen zoals jij en andere klimaatsceptici wat deze politici niet hebben? - Maak je je weleens zorgen om de klimaatkoers die de politiek vaart? Waar 	<p>Geïnspireerd door de initiële noties van anti-institutionalisme en motivated reasoning. Daarnaast kwam uit de exploratieve kwalitatieve contentanalyse naar voren dat sceptici de kunde en integriteit van politici op het gebied van klimaatverandering in twijfeltrekken</p>

	<p>maak je je vooral zorgen om en waarom? Wat zou er volgens jou moeten veranderen? Waar liggen kansen?</p> <ul style="list-style-type: none"> - Internationale en nationale overheden leggen veel nadruk op groene energie en broeikasgasvermindering, hoe denk jij hierover? Wat is jouw kijk op initiatieven als windenergie, zonne-energie en biomassa? Als deze niet effectief zijn, waarom wordt dit dan wel gepromoot door bepaalde politici en wetenschappers? Wat zijn hun motieven? - Zijn er ook andere terreinen naast klimaat waar de politiek steken laat vallen? Hoe komt dit? Zijn de oorzaken hiervoor te vergelijken met het inadequaat oppakken van het klimaatissue? Waarom wel, waarom niet? 	
Conclusie:	<ul style="list-style-type: none"> - Heb je het gevoel dat je alles hebt gezegd wat je wilde zeggen? - Als laatste check, om te kijken of ik je goed heb begrepen, kun je als afsluiting in een paar zinnen uiteenzetten wat jouw visie op het klimaatdebat is en hoe die zich heeft gevormd? - Hoe vond je dat het interview ging? - Ken je mensen die in het kader van dit onderzoek ook interessant zijn om te interviewen? (Snowballing) 	Netjes afronden.