A post-structural feminist analysis of the contemporary framing of climate change

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Preface

First initiated by environmental issues, subsequently fortified by the increasing climate awareness, today pushed by the rise of veganism and anti-speciesism in the public debate, ecological ethics are now on center stage, questioning our positioning and relationship with the non-human world. We used to consider the natural world and animals as resources, sophisticated machines at our disposal for exploitation to provide us all sorts of goods, to provide us with company and affection, unfairly establishing a sharp frontier between the ones we affectionately call 'pets' and the rest of them which, at best, can be used as workforce or entertainment in circus, zoos, aquariums. Although the future has never been more uncertain, things are changing, urging us to give the best of ourselves, using twice as much as imagination and coming up with new ways of thinking. We now have the tools to write a new chapter of the Anthropocene which will be remembered for the actions we have taken and not humankind's passiveness facing the consequences of its deeds.

The idea for this thesis emerged from intellectual curiosity for ecofeminism. I afterwards thought of writing about ecofeminism and climate change before switching for a more clear-cut analytical lens. Today we must confront ourselves with our arrogant and inappropriate anthropocentrism and contemplate something else than the current nihilist capitalist system. It is time to opt for a vision of the world where growth is not a synonym of skyrocketing numbers on a screen in Wall Street neither increasing inequalities between the Global North and the Global South or destruction of the the Indonesian jungle for palm oil plantations. After this research I am utterly convinced that post-structural feminism constitutes an alternative way of looking at the world that can bring the change that we require.

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I thank my dear friend Jon Antonsson for kindly giving me the permission to use his picture for the cover, Felix Meuer for his insightful help during the analytical part, as well as Sarah Stritch and Ian Wakeman for proofreading. Lastly, a special thank to Irene Dankelman who supported me all along and offered me a precious second chance. I could not have dreamt of a better supervisor.

Summary

Climate change is seen today as the major challenge of the 21st century. Its manifestations have a dramatic impact on the ecosystems of both human and non-human populations. The loss of biodiversity and other long-lasting repercussions have been signaled for a long time already, keeping climatologists, biologists and local populations in a constant state of alert.

Our relationship with the natural world has remained in flux throughout history. Major historical events like the Scientific Revolution, the Industrial Revolution or the emergence of environmentalism have reconceptualized that relationship. Nature not only shelters and houses the human race, but also supports and makes life viable through the provision of food, water and resources from. Until proven otherwise, we need Nature. On this basis, we must consider and value the environment as we interact with it. Throughout time, Nature has been successively seen as a divinity, a nurturing mother, a machine, a treasure to fence, a threat, a storehouse and today, with the worrying manifestations of global warming, a problem to solve. In order for us to actively address climate change, we first have to identify environmental existing ideologies because they actively shape our conceptions and framing of the world and the success of mitigation as well as adaptation strategies rely on accurate profiling of these. By applying the research of scientists and relevant policymakers and informants can accurately target the large range of stakeholders, communicate more effectively and, hopefully, initiate durable societal changes. Prior to that, questioning the dominant discourses fostered by peculiar ideologies is imperative. Post-structural feminism starting from the assumption that power relations are everywhere allow us to spot fallacies and biases which have become transparent or rendered 'natural' in the course of time. Putting forward themes like the standpoint, exclusionary and disqualifying practices and discourses or specific struggles related to class, gender, sexual orientation or race; this is the reason why the contribution of intersectionality, among others, is deemed necessary.

First and foremost, written depictions of Nature were found in sacred texts dating back as early as 776 B.C. Christianity, Islam and Judaism each have depicted Nature as an omnipresent divinity. Scholars consider that the 'discovery' or 'invention' of Nature constitutes the dawn of Western philosophy. Greeks used to englobe Nature in the cosmological order which also included animals, plants and human beings in what is known as 'The Great Chain of Order'. The Aristotelian view was a metaphysical one in which all things had an essence and properties, being subjects to physical laws. The Earth was seen as alive and provided with emotions (storms, volcanic eruptions etc.) in which believers would see the manifestation of their Gods.

This metaphysical vision of Nature significantly changed during the Enlightenment with the onset of the Scientific Revolution. The positivist doctrine gave birth to a coherent worldview which rejects mysticism and praised the systematization of empirical knowledge. The basis of modern sciences was built on Merton's principles and was composed of experiments, observation, rigor and reason. Intuitive knowledge became void, just as theology and Ocularcentrism as an empirical method permitted 'real Truth' to be accessed. Quantitative data and the categorization between primary and secondary properties weakened sensory impressions, ignoring different ways of knowledge. Disciples of Bacon, Descartes and Newton carried the hope of a unified and universal knowledge which would allow complete understanding and mastering of Nature. This became a reality with the metaphor of Nature as a machine which rendered it manageable through rational understanding and efficient action. Mechanistic assumptions about Nature have paved the way for human stranglehold through increased mechanization and alienation of the environment. The

divide between gender and gender symbolism contributed to the emergence of modern sciences in a sexist, androcentric and speciesist way; creating persistent binary divisions such as male/female, feminine/masculine, reason/intuition or active/passive, to cite a few. Consequently, women, people of color but queer people non-fitting the white, Christian, patriarcal and heterosexist society were excluded from and by the practice of science. Accounts of knowledge produced at the time constituted 'selective reports' as Harding puts it (1986).

In the 19th century the Industrial Revolution consolidated the hegemonic place of science and technology in society. The notions of 'growth' and 'progress' being at their zenith, sovereign capitalism and an acceleration of colonisation brought radical societal changes.

The rise of the environmentalist rehabilitated holistic knowledge, praising a closer relationship with the environment based on real experiences and emphasizing our ecological ties. Ralph Waldo Emerson and other Romanticists walked hand in hand with the conservation movement forming what can be considered as the pillars of today's environmental activism. It is not until the 20th century that Environmentalists worked with feminists towards a 'science for the people', questioning epistemological principles as well as the numerous biases and inequities furthered in the scientific domain.

This qualitative method used in this thesis is a single case study of the student population of Radboud University in Nijmegen, Netherlands. It focuses on environmental discourses and climate change, interrogating with what kind of framing do we apprehend climate change today.

Seven semi-structured interviews have been conducted with students aged 19 to 30, studying diverse background like religion sciences, astronomy and physics or green criminology. The inquiry focused on the lifestyle of the student, his/her vision of Nature, growth, science and technology as well as his/her opinion about the different stakeholders involved in climate change e.g. businesses, the State, NGOs etc. The interview guide also included a self-rating for participants to evaluate their eco-friendly behaviour and last, a visual data part composed of ten pictures related to the environment which was imagined in a thought-provoking way to incite the respondents to spontaneously react on them.

The data analysis has been carried out with the help of Atlas.ti in order to code the interviews and pursue pattern-matching according to John Dryzek's classification of environmental discourses (2013). Ideas about key concepts like Nature, science or growth have been isolated as well as the different stakeholders. This enabled me to reflect on the data collected through the chosen analytical frame of post-structural feminism, a branch of feminist that benefits from the relevant insights of post-structuralism theory. This frame places discourse analysis, the question of subjectivity and agency and power relationships at the heart of the investigation. Post-structural feminism seeks to destabilize and deconstruct meta-narratives to highlight dominant and exclusionary principles. This new rhetoric offers a thorough critique of modern sciences which presents many hegemonic features. Both feminism and post-structuralism are interesting to look at the framing of climate change through the critical study of speech and texts. Hereof, they are intensely political because in the way they challenge the liberal humanist vision that individuals are free and capable of mastering the universe.

Following an overview of the dominant environmental discourses today, combining the work of Fleming et al. (2014), Dryzek (2013) and Shanahan (2007), the content of the interviews have been scrutinized. Results showed a large variety of ideas about the different actors and what is their role to play in the context of climate change. Some respondents align on certain points while having

completely different views on other subjects like the management of global action or who is to blame for climate change. Generally speaking, they all recognize the major impact of Industry, specifically related to the exhaustion of resources and pollution but also in association with consumerism, both as a driver for and a result of growth (in the sense that companies have a constant lure of profit).

It appeared, however, that the complexity of climate change was rightly captured in the data because all stakeholders (citizens, businesses, States, NGOs, the scientific community and the media) were subject to criticism and praise. They stressed on the fact that active interest and willpower are required. Analysis of opinions on the topics of technology, science and growth revealed more ambivalent opinions as well. Largely, they are seen in a positive way because they are synonyms of progress, innovation and new opportunities but the scientific activity was quite criticized for being far away from citizens. The data also revealed multiple traces of green radicalism types of discourses (cf. Dryzek, 2013) which are part of an environmental ideology that advocates biocentrism. Despite the ecological awareness of people, we observe the persistence of the anthropocentric view which places humankind and its interests over other species, therefore considering them as inferior. It is established that the Millennial population is very well-aware of the occurrence of climate change as well as the risks it represents and that, despite studies revealing a lesser engagement in environmental activism from Millennials compared to their elders, young people today proved that they are committed to sustainable change. This is seemingly in hope of a better future,be it via associations e.g AGREEn at Radboud University or under a different form that materializes itself through consumption choice (like vegetarianism) or participation to the public debate on social networks –activities which fit better this individualist era.

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GLOSSARY

Androcentrism: practice which consists of placing men, masculine point of view and interests at the center of the world to the detriment of women and femininity.

Anthropocentrism: belief according which human beings are separate and superior to Nature, therefore central in the world. It commonly denies any intrinsic value to non-Human life and justifies the exploitation of other entities because they are considered as mere resources.

Biocentrism: ethical point of view according to which all forms of life have intrinsic value.

Empiricism: in philosophy the theory of empiricism consider that knowledge derives from sensory experiences as opposed to rationalism; in the philosophy of sciences empiricism refers to evidence discovered in experiments as a fundamental part of the scientific method.

Flexitarian: someone who mostly follows a vegetarian diet but occasionally includes meat and fish.

Intersectionality: term coined by Kimberlé Crenshaw in 1989 who defined it as following: "The view that women experience oppression in varying configurations and in varying degrees of intensity. Cultural patterns of oppression are not only interrelated, but are bound together and influenced by the intersectional systems of society. Examples of this include race, gender, class, ability, and ethnicity."

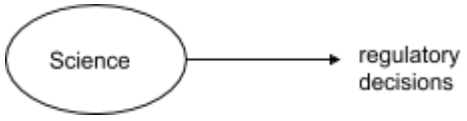
Logocentrism: refers to the Western tradition which considers the *logos* (Greek word for "word", "speech") as superior. Logocentrism focuses on language or words to the detriment of the things to which they refer.

Ocularcentrism: centrality of the visual in contemporary Western societies.

Speciesism: "the unjustified disadvantageous consideration or treatment of those who are not classified as belonging to one or more particular species" (Horta, 2010 p. 244).

Technoarrogance: "arrogant and prevailing attitude of the human species that we can control most of the important aspects of our lives and of nature through technology, irrespective of ultimate and perhaps devastating consequences. Such arrogance fails to recognize or accept limitations and ramifications of the attempted control of our human environment and of nature." (Meffe

Technocracy: decionist model where policymakers rely on scientific knowledge, placing scientists and experts on high esteem.



(diagram from Hulme, 2013)

I. INTRODUCTION

1.1 Research background

If a handful of words would have to be selected in order to capture the essence of the 21st century, no doubt that climate change would be one of those.
Today, the great menace embodied by climate change is everywhere, including environmental, societal, political and economic aspects. It is a threat to ethnic, national and global security (Hulme, 2009). The responsibility of anthropogenic drivers is now known as the dominant cause of observed global warming since the mid-20th century (IPCC, 2014). However, because of its polymorphous and multidimensional characteristics, climate change cannot be reduced to a natural phenomenon (Dryzek, 2013). That is why it is so tedious to encompasses all its aspects. For example, the emission of greenhouses gases which are responsible for global warming is caused by different sectors: the meat industry, transportation (especially aircraft), fossil fuel extraction and, at a lower level, each and every one of us. In its 2014 report, the Intergovernmental Panel on Climate Change (IPCC) has indicated that a lot of terrestrial, freshwater and marine species have been affected in many ways by ocean acidification, the alteration of resources and changes in extreme climate e.g heavy precipitation, heat waves, droughts, etc., and that there is a high confidence it was the cause of a shift in behaviours such as migration patterns or seasonal activities. Year after year, predictions alarmingly prove out to be accurate. Recent scenarios predict long-lasting outcomes as well as "pervasive and irreversible impacts" (IPCC, 2014 p.56; WWF 2016). All the signs suggest that inaction will be followed by severe implications.

From a societal perspective, climate change fascinates social scientists because of its plasticity, that is to say "its ability to be many things to many people" (Hulme, 2009 p.xxi). Climate change can therefore be seen as a story, in different chapters: where it comes from, what are its manifestations, how is it perceived and what are our answers to it. But as Lorenzoni & Pidgeon comment "climate change is a very complex, pervasive and uncertain phenomenon, generally difficult for people to conceptualize and to relate to their daily activities, arguably because it cannot be easily translated into the language of popular culture" (2006, p.74).
This is the reason why I chose here to focus on the framing of climate change using post-structural feminism as a magnifying glass because of the complexity and intricacy of the phenomenon.

1.2 Problem statement and research objective

We nowadays live in a society where technosciences prevail: "Human affairs are now mediated at every level and on every scale by science-based technology and the economic activity it engenders." (Sarewitz, Pielke & Byverly, 2000, p.91). The same observation goes for climate change which appears largely scientifically framed (Fleming et al. 2014; Dryzek, 2013), but how it is framed largely influences our resilience and responses to its manifestations (McEvoy, Funfgeld & Bosomworth, 2013). More particularly, our perceived control over a risk depends on how dangerous and likely to happen we estimate this risk, also influencing, the perception of a risk itself (Beck, 1992). The vulnerability to the same risk is the result of the relationship between our exposure to hazards with our resilience (the capacity to respond to it). The thing is, we evaluate risks differently and Hulme (2009) indicates that this is one the reasons why we disagree about

climate change. For all that, it sometimes seems like only science can save the world. Carrying the hope of businesses who are urged to enter carbon transition, science proposes new solutions for a more sustainable future : renewable energies, new materials, more efficient waste management, less emissions of greenhouses gas etc. Geoengineering goes further, arguing that major human intervention is now required and feasible (Kunzig, 2008). However geoengineering is widely criticized for proposing miracle solutions like capturing the CO2 with ocean fertilization or CO2 sequestration and legitimizing large-scale manipulation of the planetary environment. The problem is, ecological modernization as it extols science and technology, may conceal the roots of the problem, as illustrated by Meffe's concept of 'technoarrogance'[1] (1992). Moreover, the field of science and its history have produced throughout the centuries an Eurocentric, sexist, racist and speciesist knowledge which has emerged within the positivist doctrine, praising empirical theory and based on emphasizing what can be observed with the eye –known under *ocularcentrism*[2] (Merchant, 1996). The scientific discipline for long remained the privilege of cultivated and highly educated White males (Merchant, 1996). Even though the situation has improved with the emancipation of women and voices of other minorities, science largely remains a masculine field (Beede et al., 2011). It proposes a transcendental truth and consequently rejects what does not fit the definition of such truth. Ideologies of mastery over Nature derive from such science.

Despite the problems represented by the prevalence of hegemonic science, it would be very hypocritical not to acknowledge the crucial role natural sciences have played in the understanding and communication of environmental and climatic featured risks; the sciences "have been the first to sound the alarm" as rightly stressed by Latour (2017, p.55). In parallel, science and technology have considerably improved human life, providing us with new techniques and tools in the domains of medicine, surgery, astronomy, agri-food, computer science, communication and many others.

Theory and science meet at the intersection of human involvement in conceptions about our world: we are always under the influence of subjectivity and therefore phenomenology or structuralism is considered irrelevant (Thompson, 2008). When we read, we read from a set of conceptual structures, we are part of a social, cultural and economic system with its own history. This also applies to our surrounding environment; we are part of a reality and as we interact with it, it is always changing. In the field of ecology our beliefs dictate our actions and therefore have long-lasting and significant impact, which can be observed in the domain of policy-making for example.

This thesis aims at unraveling common perceptions of the environment and and to make a connection with how science has impacted it, spotting the dominant ideologies and the ideas they vehiculate about climate change. With this aim in mind I make use of post-structural feminism as an analytical lens and reflect on the relevance of such a choice.

[1] see Glossary p.8
[2] ibid

1.3 Research questions

In order to go through with my research objectives, a research question as well as two subquestions have been formulated:

- To what extent can post-structural feminism help us understanding the framing of climate change today ?
    - in what ways have modern sciences shaped our vision of Nature ?
    - how is this related to the discourses around climate change ?

The two subquestions can be seen as landmarks and in trying to answer them it is also my hypothesis that is being tested i.e if using post-structural feminism as an analytical frame is useful and relevant for a better understanding of the contemporary vision and ideas of climate change

1.4 Relevance

Many authors have already arrayed resources to write about environmental issues and women, ecofeminists especially (Merchant 1980; Salleh, 1997; Gaard, 1998; Bari, 1998 to cite few) and the existing literature about post-structural feminism is also quite dense. But this actually constitutes an asset in order to successfully provide a detailed, informative and explanatory theoretical framework. More specifically, the societal and scientific relevance are substantial: as for science, its principles and applications are unpacked, its assumptions interrogated as well as the considerable influence it has had on society as a whole. The conflicting views about its principles are exposed, making clear that some are obsolete and controversial.

Because climate change includes a large variety of actors among actor, whether we talk about groups, individuals or supranational organizations, communication strategy must adapt to elicit appropriate answers. And prior to this, being able to accurately describe and analyze environmental discourses permits to identify environmental ideologies.

Ideologies actively shape both today's and tomorrow's worlds as they advocate for action and change (Novikau, 2016 p.15). The proposition and translation of ideas into concrete measures like environmental laws has deep, even transformative implications for the future (Chakrabarty, 2015). Discourse analysis sheds light on the importance of language in politics, unravelling meta-narratives and answers the question "how" (Hajer & Versteeg, 2005). Discourse analysis is primordial to study what ideologies are present in today's society, the dominant ones but also the ones that are in minority because they are not less important.

Climate change dramatically challenges how we live, pushing us to question things we have done in a certain way for years, it leads us to rethink the system and its apparatus. We are not without knowing that climate change affects populations differently: developing countries are more vulnerable because of a lack of institutional capacity (IPCC, 2007), poor people are believed to be more endangered by the impacts of climate change for reasons like the impossibility to flee the danger or to find another employment and ecofeminists have pointed at linkages between the condition of women and their greater exposure to climate change effects (Resurreccion, 2013; Gaard, 2015). The vulnerability is tightly linked with the capacity to anticipate, cope with and recover natural hazards according to Wisner (2004). But vulnerability is not a simple static thing

linked with a condition such as being a woman or being a Global South citizen. It is a “dynamic condition” that emerges from a variety of factors such as the allocation of resources, inequities and opportunities, freedom individuals have in terms of choices but also “historical patterns of social domination and marginalisation” (Resureccion, 2013, p. 39).

Based on this evidence, it is vital not to increase the vulnerability of those most affected by climate change and to find suitable and well-fitted strategies premised on disparities. Last, minorities and local populations are bearers of a different type of knowledge that has been and still is neglected (Boserup, 2017). Participating in the emergence of voices that have been silenced for so long is something imperative to get access to more ecologic and holistic ways of knowing but also because prejudice and inequity remain persistent today.

With the thesis I seek to contribute to a parallel framing of climate change that is close to the reality and more adapted to the urgent need to find effective, long-term, ethical and inclusive solutions to the practical and urgent problems embodied by climate change.

II. THEORY

2.1 Theoretical framework

2.1.1 Definition of the Nature paradigm

This section aims at retracing the chronology of the important events, from Aristotle in Ancient times to today's ambivalent vision of Nature under the dichotomy Nature/Culture. Throughout history a myriad of societal, economic and environmental circumstances have moulded people's conceptions and experiences vis-à-vis Nature, some of them durably.

How to define Nature in the first place ? The task appears tedious as there are seemingly as much definitions as there are conceptions of Nature. For the sake of simplicity I will retain the description proposed by Kate Soper which describes Nature as "everything which is not human and distinguished from the work of humanity [...] opposed to culture, to history, to convention, to what is artificially worked or produced" (2015, p.270). But the contradiction here lays in the fact that we use Nature to describe something foreign to humanity and at the same time we think of us as being part of the cosmos. In that sense, we are both a component of Nature, just as the nearly two million species of animals, plants and bacteria.

Ancient Times

In Ancient Times humans were conceived as part of the Great Chain of Being and this was the preeminent theory to contemplate our presence on Earth, deriving from Neoplatonist principles until the late 18th century and endorsed by the Church through Medieval times (Soper, 2015). In fact, the word "nature" originates from the Greek term *phusis*, which derived from the verb for natural growth in the pre-Socratic era. Later on, *phusis* has been translated into the Latin term *nāturā*, a philosophical term for "birth". The first conceptualization of Nature originates from the writings of Aristotle who, in his work *Physics* (350 B.C) sees Nature as the primary matter (stuff composing objects like wood composing a chair or bronze composing a statue) and the form of essence; i.e the genesis of growing things which substance is immanent. In spite of the fact that Aristotle thought of organisms and elements (fire, air, water...) as belonging to the Great Chain of Being, the Laws of Nature were considered at the service of humankind. Likewise, the deification of Nature handed over to the enthronement of humans over the rest of the creatures.

Back then Nature was traditionally attributed a female gender, in Western as well as non-Western culture. It was both seen as a nurturing mother, generous in giving resources but capable of violence with storms, droughts and other natural hazards. Greeks and Latins would interpret these as the expression of their divinities, for example a volcanic eruption would be seen as a sign from Hephaestus, Greek God of metalwork, blacksmiths and fire.

This way of seeing and apprehending Nature can also be found in the three sacred texts: the Koran, the Bible and the Torah. Other than that, almost all religious writings have in common a reverence for sacred life and the idea of stewardship expressing the duty of care and accountability of Humans to the divine (Hulme, 2009). In the Koran the multiple references to Nature are illustrations

of God's omnipresence and omnipotence (Morrison, 2008). All the sacred texts meet on the idea of sanctity of life despite clear precedence of the human over the non-human.

The Enlightenment

Since the publication Auguste Comte's series of essays *The Course in Positive Philosophy* between 1830 and 1842 in which the term 'Positivism' is coined for the first time, science has been the subject in the past centuries of extraordinary changes. Its omnipresence around us tends to make people forget how pervasive it actually is and that the inputs from science to the society also brought their share of downsides.

During this Enlightenment man "renounced religion, myth and traditional social order in the name of reason" (Dryzek, 2013 p. 195). Nature became completely desacralized, merely considered as a 'problem to solve'. Religion and superstitions used to give people a purpose, a destinity, underlying a mystic connection with the universe. But science rejected mystery. Dichotomies appeared, fragmenting religion from science in culture, opposing "knowledge" from "faith" and "reason" from "emotion" (Dunlap, 2004). Comte (1798 - 1857) and his principles sought knowledge that was free of moral, political and social values. Its aim was to discover the regularities in Nature and to establish, through the recognition of patterns, some 'real truth', putting the emphasis on the operationalization of theories.

Before the birth of positivism, Copernicus (1473-1543), Galileo (1564-1642, Newton (1642-1726) and their discoveries forever changed the conception of the universe, dealing a fatal blow to cosmology which laws became invalid. Darwin (1809-1882) too, when he published *The Origin of Species* in 1859, made it more difficult for those who believe, tearing down the Genesis account of creation, claiming that evolution was a random process. Francis Bacon (1561-1626) and René Descartes (1596-1650), legitimately considered as the founding fathers of modern sciences, put the emphasis on rigor, reason, empirical data, experiments and observation (Dunlap, 2004). The following assumptions became golden rules :

Matter is composed of particles	→ ontological assumption
The universe is a natural order	→ principle of identity
Knowledge and information can be abstracted from the natural world	→ the assumption of context dependence
Problems can be analyzed into parts that can be manipulated by mathematics	→ methodological assumption
Sense data are atomic	→ epistemological assumption

FIG. 1: the positivist tenets (adapted from Merchant, 1980, p. 228)

It is from this moment when Nature got separated from cosmology that it became 'value-neutral'. As Harding (1986) puts it, the organicist views supported the theory of a Nature intrinsically purposeful. However in the post-Copernican era a hierarchy has been established with primary and secondary properties of Nature. Primary properties being the ones that are permanent and identically measured by anyone; secondary properties being subjective with different

measurements from different observers, like the six senses (odors, colors, touch etc.). The result of this distinction is that the 'real' aspects of the world exclusively became the 'physical and quantifiable' ones. "Sensory impressions became less than real, as did politics, morals, and the entire world that emotion and feeling pick out –domains where there appeared to be no abstract, objective truth to which subjectivities would assent" (Harding, 1986, p. 228).
The Copernican revolution was in itself a power of symbolism. At first sight, pure description of the universe seems harmless but in fact it carries "religious, moral and political recommendations" (Harding, 1986, p.204). The Aristotelian view gave way to a logical and coherent worldview identified with the help of abstract laws like inertia. It has concealed another world that exists outside the realm of science's consciousness –the world of emotions, sensitivity, of different types of knowledge such as drama, art, novels, poetry and music (Harding, 1986; Merchant 1980).

With the institutionalization of science which placed method at the heart of inquiry, the 'rule by method' set ahistorical standards and procedures, making possible the transfer of knowledge from individuals to systems like computers and machines (Harding, 1986). That is how the metaphor of Nature as a machine was born. The removal of animistic and organic assumptions about the cosmos sounded the death knell of Nature insofar as this mechanistic view now presented a dead system with inert particles, thus making legitimate the manipulation of Nature, ensuing order and control (Merchant, 1980). This is how the French mechanists Marin Mersenne (1588 – 1648) or the famous René Descartes bolstered the pragmatic knowledge derived from visual observations : open a clock and the mechanism is within eyesight, cogs are visible and observing the way it is arranged one can deduct the functioning. Ocularcentrism by then became dominant and uncontested. Back to Mersenne, he attacked Plato, claiming that because the Earth had no organs of sensations, it simply couldn't be alive.

Regardless of the Lumières philosophes' honorable ambitions for mankind, the essence of these projects was typically androcentric on the one hand with a systematic exclusion of women, people of color and other minorities whose sexuality was not fitting the heteronormative society. Issues about gender identity and behaviour were ignored. On the other hand such science was blind to Nature's order, despite its obvious harmony and denied its interdependent and interconnected systems (Boserup, 2017 p.6).

Nature as female : legitimization of phallocracy and hegemonic discourses

During the 16th and 17th centuries the female imagery of the Earth as a nurturing mother was gradually transformed into an opposing image of female Nature as disorderly, wild and chaotic which needed to be subdued, controlled and mastered by the man of science (Merchant, 1980).
The next transition between Nature and modern science lies in the conditions that have permitted the Scientific Revolution, that is to say a new conception of the natural order. This has been possible thanks to the replacement of religious meanings by symbolic ones. As put by van der Meer & Oosterhoff, (2008) "the rise of modern science required a focus on nature for its own sake". Nature began to be conceptualized in a different way than a religious one when its symbolism started to be rejected, notably in Protestantism.

Protestants dismissed the ambiguous meanings of Scripture to replace it by literal reading and understanding. This created a 'vacuum' which left space for new interpretations of the environment –in this case scientific ones. Besides the schism between the Catholic and the Protestant Church, the Copernican revolution has also sparked vivid debates within Christians and as it were, theological divisiveness served the cause of science. Later on, natural philosophers also took sides against Scripture and in response the study of Nature finally appeared as a superior source of divine knowledge (van der Meer & Oosterhoff, 2008). With regard to the lexical field used in the scientific culture to talk about experimental methods and the relationship between researchers and their theories, plethora of gender metaphors and analogies have been used (Harding, 1986).

In the light of this, two opinions have been formulated : first those like the English physicist N.R. Campbell (1880–1949) who raised in 1920 the objection that analogies and metaphors are rather the expression of intellectual satisfaction and that, because theories constantly need to be re-evaluated and extended, analogies were worth because they lead to the formulation of the theory, providing intelligible models; 40 years later, Mary Hesse (1924–2016), a fellow philosopher of science contested this idea, explaining that metaphors used in science are not "merely heuristic devices" and that the danger is embodied by an extended use of the metaphor to the point that it invalidates the original meaning when people start to understand them in their new, postmetaphoric sense. Her premise is illustrated with the example of Nature becoming more like a machine in mechanical philosophy, disposing of its inherent elements and accentuating the likeliness of its exploitation by men as a machine. Thereupon in most minds, Nature becomes something supposed to fulfill a function. Moreover, besides the role of a better understanding of a concept with descriptions full of imagery, metaphors express value judgments. Here I will quote Harding as it is:

> To say "nature is rapable" –or, in Bacon's words : *"for you have but to follow and as it were hound nature in her wanderings, and you will be able when you like to lead and drive her afterward to the same place again... Neither ought a man to make scruple of entering and penetrating into those holes and corners when the inquisition of truth is his whole object*"– is to recommend that similar benefits can be gained from nature if it is conceptualized and treated like a woman resisting sexual advances. (Harding, 1986 p.237)

She also uses an interesting metaphor to qualify the stories told by science: she argues that they are similar to autobiographies in the way that they constitute 'selective reports'. She goes on: "their faithfulness to history is limited by the authors' perceptions of what is significant about their lives". (1986 p.237). Such limitations are being reinforced by the fact that at this time there was no philosophy of science and people were consequently lacking a critical tool to judge such stories. Not only science was brazenly affirming one truth but in the absence of detracting counter-power it appeared as the embodiment of the Truth itself... not to forget that only a small fraction of the population had access to education and this constituted a problem because the scientific Elite appropriated itself the critical thinking, denying it to those considered as 'incapable'.

18th & 19th century: the Industrial Revolution

The Industrial Revolution asserted man's power and domination over Nature. Technological developments in metallurgy, mining and textile manufacture together with the invention of the steam machine deeply transformed the Western world, boosting the production and increasing the wealth of developed countries. The tremendous progress in medicine enabled us to fight epidemics and the "hygiénisme"[3] movement increased life expectancy.

This position towards technology is reflected in Herbert Marcuse's writings (1898-1979). Member of the eminent Frankfurt Schule, he advocated technological rationality and to him, if technology was not a condition for human freedom it was at least a necessary condition for it. This included the "virtual abolition of labor and scarcity by technology"(Vogel, 1995, p.24). Though Marcuse was strongly promoting the total alienation of labor to access fulfillment, his position in *One-Dimensional Man* (1964) is rather ambiguous insofar as he puts forward the idea of a New Science in which Nature, as "a historical entity" would be treated as "a subject in its own right", (Marcuse, 1972, p.60), expressing an ideal that goes against the dominance of technology over natural resources.

Modern sciences in their hegemonic race together with capitalist economy have left many by the wayside and opposing laggards (or losers) to leaders (or winners). Western imperialism expanded its grip on other nations via colonisation, imposing its worldview, rejecting foreign cultures, disdaining "Barbarian" habits and customs (Montaigne, 1965). We are not without knowing today the disastrous consequences of colonialism on ecosystems and populations -not mentioning the dreadful institution of slavery which legacy is still tearing apart post-apartheid societies as in the United States. In fact, the explorers' relentless quest for lands and natural resources has been vital for capitalistic growth (Gallissot, 1974). From the social aspect, Ester Boserup's research about how women in colonies have been "de-skilled" and "de-intellectualised" and disfavoured in terms of access to education, land, technology and employment (2017).

However dissident opinions started to appear at the turn of the 19th century when American Romanticists like Ralph Waldo Emerson, Henry David Thoreau or Mary Shelley rejected the core elements of Enlightenment and furthered the idea that modern sciences and technology were responsible for the destruction of Nature and had fueled human arrogance at the same time (Dryzek, 2013). Romanticism advised more empathy towards non-Human creatures and minorities and participated in the emergence of a new environmental consciousness, critical of the economic system and the associated politics, constituting one of the stepping stone of the environmentalist movement.

[3] French term to describe a movement aimed at optimizing the public's health and well-being applying a set of medical and dietetic measures as well as rethinking urban spaces, sewage system, waste management and providing more green spaces

Contemporary era

At the beginning of the 20th century a doctrine deriving from Comte's positivism sprang up in Vienna. Known by 'logical positivism' it was represented by the Vienna circle, a group of scientists and philosophers and became one of the dominant schools in the Anglo-American philosophy and the analytic tradition. These theorists believed that the sciences were arranged in a hierarchical order according to their thought.

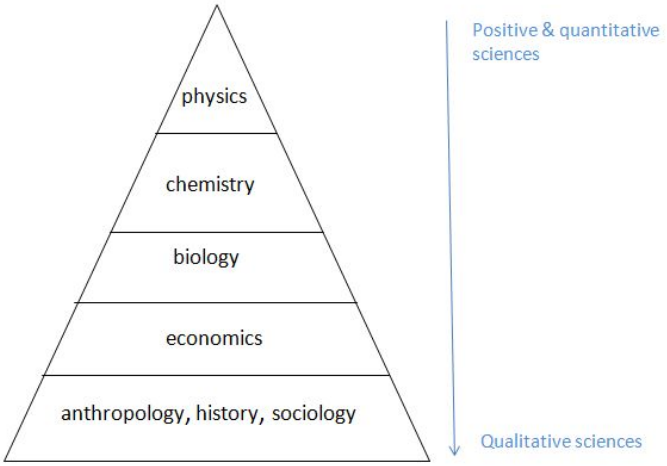


FIG. 2: hierarchy of the sciences according to the Vienna circle (source: author)

Feminist critique has since contributed to reverse the order of this continuum (Harding, 1986), justifiably rehabilitating social sciences and giving priority of a postmodernism approach that values more moral and political theories over scientific and epistemological theories.

In parallel, the environmental movement emerged in the Western world at the end of the 60s. It welcomed the modern belief as a purveyor of knowledge but it also rejected the simplistic vision proposed by it, holding the assumption of a detached Nature and a purposeless universe (Dunlap, 2004). Aware of the destructive potential of human activity, environmentalists also stood against the 'conquest of Nature' exacerbated by technological improvements (use of satellites and GPS for mapping, sonars for fishing, more powerful tools like harvesters, etc.). They called on humans to be more respectful, reflect on their behavior and eventually change it.

Environmentalism gained popularity, led to green consumerism and other sets of practices which aspired to be more eco-friendly and/or reconnect one's inner self with Nature (like bioregionalism for example). However, inevitably it relied on Science just as the rest the society (Dunlap, 2004). But in fact, difficult if not impossible was it to do otherwise since their credibility was at stake. Indeed, environmentalists have always been partly stigmatized because of the core basis of their activism, associated with the hippie movement whose radicalism triggered a vivid opposition. As an example, The Club of Rome and its publication *Limits to Growth* faced anti-environmentalists' accusations of "wanting to send people back to the caves to lives on nuts and berries" (Dunlap, 2009 p.40). People felt that their personal freedom was threatened : freedom to consume, freedom not to care, freedom to have babies...

Ultimately Environmentalism became fragmented with on one side deep ecologists, on the other side liberal environmentalists.

Texts like *Silent Spring* from Rachel Carson (1962) or *Refuge* by Terry Tempest formed the bedrock for the ecofeminist movement. Ecofeminism acts from the position that "domination of nature and of women are interconnected" (Salleh, 1997 p.108). One of the case often described by ecofeminists puts forward the Chipko movement in Northern India in 1973 when a group of local women from a small village protested against deforestation. Ulteriorly, Merchant (1980), Salleh (1992) as well as Vandana Shiva or Maria Mies (1993) considerably strengthened the theoretical basis and contributed to a greater visibility and credibility of ecofeminism. Shiva especially incarnated the voice of developing countries and defended the idea that feminism, behind its laudable idea of supporting women of the world, was suffused with white and Western discourses (1993). According to ecofeminism the history of man's domination and mastery over nature can be associated with similar patterns concerning women. The feminization of Nature and the naturalization of women justified dominations of women & Earth. This has been done through dominant images and metaphors which have culturally shaped values and behaviours toward women & Nature deriving from essentialist claims that women were from the nurture side as opposed to culture. And as expected, this female imagery and discourse was controlled by men.

Consequently, for centuries the views on women for centuries were solely expressed through a deeply gendered Nature with embodiments of motherhood and sisterhood. These views always occulted and denied the individual in itself, the human being with its agency, integrity and autonomy. "The violence to Nature which seems intrinsic to the dominant development model is also associated with violence to women who depend on nature for drawing sustenance for themselves, their families, their societies" (Shiva, 1988, p.202). From a different perspective, narratives of scientific fact were denounced as potent fictions of science by feminists. First, the research and writing tended to be done in a way that positivist tenet and second, the people doing science are subjects to the social, historical and ideological context. Haraway (1985) indicates that most likely because of imperialism and colonialism White and economically privileged males have undervalued interrelationships of humans, animals and land.

The 20th century reached a milestone, outlining a society building itself on a new infrastructure where religion was dismissed to the benefit of science, considered as the unique acceptable source of understanding (Dunlap, 2009). Belief in supernatural, although formerly considered as the 'basis of civilization' fizzled out. Science became hegemonic in the sense of Gramsci i.e "a certain way of life and thought is dominant [...] and is diffused throughout society to inform norms, values and tastes, political practices, and social relations" (Sassoon, 1982 p.5). As such, materialism became the modern world we know today, praising technology to the sky as well as capitalism and growth (Dunlap, 2009). From this point modernization started to be associated with new forms of dominance: a dominance over the Nature's own power to sustain organisms and ensure their survival (included ourselves) which has led to the emergence of innovative processes to better control our environment. Together with the creation of wealth is the emergence of inequality, poverty and dispossession. Ecosystems became increasingly fragilized as the "limitless appetite for resource exploitation" (Haraway, 2004, p.17) exhausted stocks of natural gas, minerals, triggering deforestation, draining of fresh water reserves and precipitating one of the biggest biodiversity loss of the Earth's history (IPCC, 2014).

I was not until the end of the 20th century that the doctrine of empiricism became scrutinized by philosophers, sociologists and historians like Berry Barnes (1977), Thomas Kuhn (1970) or the remarkable works of Bruno Latour (1987; 2013) as well as Donna Haraway (1985), aligned with the tremendous boom in sociology of scientific knowledge in the 80s (Potter, 1996). The objective of

these writers was the breakdown of the importance given to observation and theory at the intersections between societal aspects and the practice of Science.

Semiology, post-structuralism and postmodernism contributed to a new approach of fact construction, their axiom resting upon the distrust of language and its vocation to map reality (Potter, 1996). The work of the linguist Ferdinand de Saussure (1857–1913) is noteworthy for its linguistic analysis of the signs, introducing the concept of *langue* versus *parole* while Barthes (1972) extended the interpretation, pointing out the importance of the context in which signs are used and the set of ideas behind these. Post-structuralism essentially, as well as feminist thought have considerably contributed to the critique and evolution of scientific epistemology, as demonstrated in the following section.

2.1.2 The contribution of feminism & post-structuralism

According to Campbell (1996) both feminism and post-structuralism critique, interrupt and rewrite normative, hegemonic and exclusionary ideologies and practices. They have in common their motivation to deconstruct meta-narratives or what Campbell refers to as the traditional dominant ideologies : patriarchy, technocracy, logocentrism and anthropocentrism. In doing so they also refuse the traditional binary divisions such as subject/object, self/other, reason/intuition, masculinity/femininity, active/passive and of course Nature/Culture, as evoked a bit earlier. In Western intellectual thought as for the critique of the Nature/Culture dichotomy Carolyn Merchant and her book *Death of Nature* (1980) has had an enormous influence : for the first time intrinsicate interconnections were brought into focus –historical, symbolic, literary, artistic, economic, ethical and philosophical (Warren, 2000). Merchant has showed that the binary division has been used to hierarchically "assign higher status, value or prestige to male-identified traits of culture and males while assigning lower status value or prestige to female-identified traits of nature, females and people of color" (Warren, 2000, p. 188). What is denominated by feminist STS (science and technologies study) has contributed a great deal to more adequate epistemologies, ontologies and philosophies of science, interrogating taken-for-granted assumptions, the representations of women in past and present history of technoscience (Subramaniam & Willey, 2017).
The relativist claim that science knows Nature and that Nature is only valuable under human exploitation of its resources has been at the centre of post-structuralists and (eco)feminists. The recognition of the fact that male authority and its abuses have trapped both Nature and women, leaving a long-lasting mark on today's socio-cultural context, permits to contextualize and to retrace the origin of persistent discriminations.

Insofar as the three main focus themes of post-structural feminism are discourse, power relationships and the subjectivity and agency of individuals, these three elements will be especially looked at within the analysis for this research. They all "reject presuppositionless representation, arguing explicitly that such representation is both politically undesirable and philosophically impossible" (Agger, 1991, p.106). For instance, Merchant underlines that Ruth Bleier in *Science & Gender* (1984) uses Foucault's discursive analysis to prove that the main tools of scientific discourse (mathematics, observation and experimentation) are *"*permeated by the principle of domination*"* (1980, p.62). She herself argues that this conceptual model of science can be used to justify subordination of women but also queer people, Global South citizens as well as non-human animals and Nature strictly speaking. Knowledge had been constructed by privileged social groups who had the means and power to shape the reality as they please but the result is a distorted picture

because it has muted the voices of others, only acknowledging them under the forms of oppression, servitude and utilitarian view (Salleh, 1997; Gaard, 2011; Kaijser & Kronsell, 2014). Examples involve the male depiction of menstruation and pregnancy as diseases, the gender bias in describing reproductive physiology or the heterosexist view of homosexuality as a deviance. As a consequence, because of such exclusion from the scientific milieu, no one has let women the chance to express their own opinion and define their own nature. They were (and still are) believed to be passive, emotional and malleable (Merchant, 1996). On the contrary, the way masculinity is viewed reinforces male hegemony, displaying characteristics of rationality, activity and domination.

Post-structuralism emerges as a dissident movement rejecting the structuralist tenets of the early 1900s, embodied by French authors Michel Foucault (1926-1984), Louis Althusser (1918-1990) or the philosopher and linguist Jacques Derrida (1930-2004). The latter is deemed particularly relevant because he proposed new ways to read and analyze "densely technical and methodological discourses of the empirical social sciences" (Agger, 1991, p.114). Derrida's insights into reading and writing disqualify the positivist model of a researcher who simply reflects the world 'out there', suggesting new ways of writing and reading science. He insists that every text is undecidable in the sense that it conceals conflicts within it: we cannot understand a text without its concealments and contextualizations of meaning. His central claim was that no stable meaning can ever be established between the world and how the world is apprehended by language. Based on that he denounced that the embeddedness of positivism in language (and for science in methods) is from the start problematic because language is just a mere 'technical device'.

Science written from the perspective of deconstruction avoids overreliance on "technical and figural gestures; instead it continually raises its assumptions to full view and thus invites readers to join or challenge them" (Agger, 1991, p.155). Post-structuralism shows that a new rhetoric reading can actually apply to a large variety of non-discursive texts paying attention to 'subtexts' such as citation practices, use of number and figures, footnotes, appendices, etc. It emphasizes how language shape and gives life to reality; a reality full of possibilities where other ways of writing and reading are possible outside hegemonic content creation. So literary texts according to post-structuralism do not have one single reading and one single meaning; it can be interpreted in as many ways as therefore a point of view, for instance reading the same text from a Marxist and from a Keynesian stance radically changes how we interpret the content. One view will discern elements that the other view intrinsically ignores.

To summarize, we create the systems, we are not in control of them. Barthes (1915–1980), using the example of an author, said that a writer or an artist are not original; in fact every individual through the reading of the text or the contemplation of the painting will interpose his or her own meaning. As a consequence authors are de-centered. This displacement is destabilizing but it allows a whole new interpretation of texts, discourses and pieces of art. Sources stop to be authoritative. Lastly, contrary to New Criticism (or 'Formalism') which is also a literary movement examining the form and substance of texts, post-structuralist analysis presents the advantages of re-inserting elements existing around the text like cultural norms or references to other sources of literature. In short, poststructuralism –together with critical theory and postmodernism– challenges empiricists and encourages them to see that their own analytical and literary practices encode and conceal value positions that need to be brought to light.

2.1.3 Framing in question: what is meant by framing ?

Frames, according to Goffman (1974) is the organization of our experiences as individuals, groups or societies, categorizing and interpreting things. Basically, it is how we feel about what surrounds us; places, people, situations and how we label them. Therefore frames are intrinsically linked with language. So as people assemble the world into their own world, their own reality, they naturally position themselves. This is what we call 'appropriation' (Benford & Snow, 2000).

There is three types of dimensions in frames. The first one is the ontological one (or diagnostic), the second one is the normative one and the last one is the strategic dimension. Frames here are related to discourse. A discourse exists within a frame and the frame is part of the ideology itself (see conceptual model p.23). This section's focus is on the connection between fact construction with dominant discourses about climate change. The dimension about framing connects with the following question: "How are descriptions produced so that they appear factual ?". As previously seen, modern sciences have projected images and values into Nature. Lövbrand, Wiman & Stripple (2009) notice how difficult, if not impossible, it is to separate the idea of a human-dominated planet with plethora of empirical investigations about our impact on the biodiversity, the impact of diverse types of pollution (air, water, soil), land clearing, mining or deforestation. But also relevant are wildlife preservation programmes, studies following the creation of areas protected from fishing in the Maldives or the amazing Svalbard Seed Global Vault, a global seed bank gathering 5978 species with 106,0987 seed samples (Global Seed Vault, 2018). There shows that the human footprint is nowadays everywhere.

In the context of climate change the ontological dimension asks the following question : What is reality ? How do we conceive the world ? What do we make out of it ? The normative dimension interrogates our benchmark of what is considered as good, bad, fair, unfair etc. Climate change, by common consent, carries a negative connotation, imbued with fear, uncertainty and, in the most extreme cases it literally evokes apocalyptic vision of chaos, destruction, collapse (like in the Limits & Survival discourse of Dryzek, 2013). But why is that ? Climate change obviously represents a danger for earthlings because it disrupts the ecosystems, putting in jeopardy the natural habitat of thousands of species, including us humans. It deeply affects the biodiversity, causes more natural hazards, provokes extreme temperatures. But let's play along for a minute and imagine that human extinction is a thing, as does Alan Weisman in his book *The World without Us* (2008). No doubt that traces of our existence will remain for a long time, if we think about nuclear waste for instance, spent nuclear fuel rods contain elements which are extremely dangerous for thousands of years (the most dangerous, plutonium-238 has "only" a half-life[4] of 89 years whereas uranium-234 possesses a half-life of 245,000 years). But the Earth will keep going, new kinds of species will adapt to those changes, Nature will reassert itself and claim the place with vegetation crawling on building, undone effects of overfishing and deforestation, absorption of extra CO2... "Is it possible, instead of having a huge biological sigh of relief, the world without us would *miss us* ?" wonders Weisman. We have a moot point here.

In brief, what I am trying to say here is that the vision of climate change is anthropocentric per se, it is negatively perceived because *we* see it as bad.

[4] A half-life means that after this time, half of the element will have decayed to a less radioactive form or element

Lastly, the strategic frame derives from the normative frame. So, seeing climate change as a problem to be solved brings up all kinds of responses and plans of action. Facts, theories and hypothesis related to climate change are changed in a way that they are consistent with the normative framework of the ones holding information and relaying information (Sarewitz, 2004). So how do ideas and discourses about climate change gain currency ?

Science has been trying to make Nature value-neutral, but in fact it is not possible in the sense that Nature cannot be deprived of the political interests and symbolic associations attached to it. Environmental arguments might seem factual and scientific, but they are also meaningful and suggestive (Hajer & Versteeg, 2005). First observation makes clear that various discourses are created within different social groups like the scientific community, the media or in politics. (Fleming et al., 2014). This explains why a stakeholders analysis is relevant when it comes to study climate change. The meanings behind the rhetoric of actors affect the outcomes, laws and institutions and indeed become the context in which the environment can be discussed.
Fleming et al. (2014) observe three types of discourse :

- logical action discourse
- complexity discourse
- culture of consumption discourse

Logical action discourse showcases the need for more information as it is presented as the first obstacle to climate change action. The second obstacle is personal capacity i.e. availability of resources for individuals to take action (time, money, infrastructure, ease, flexibility, motivation, risk acceptance etc.). Interestingly, this discourse also features that this informative role is up to scientists, that they are obligated to inform the public since persuasion is a “critical component in catalysing change” (Fleming et al. 2014, p.411). Truth is that people other than scientists are generally not accepted as being legitimate producers of knowledge, and their understandings of, and feelings about climate change are dismissed or ignored, despite growing acceptance that varying localised, socially constructed understandings of climate change are legitimate (Hulme, 2009; Pettenger, 2007; Potter and Oster, 2008). In this discourse citizens are positioned as “passive recipients of information” and change is seen at an individual level rather than a societal one.

Complexity discourse is in a way related to the logical action discourse because it presents climate change as a highly-specialized issue with numerous problematic layers referring to the aspects that are concerned (oceans, land masses, atmosphere), the societal elements that it involves and the variety of responses. It highlights the uncertainty and confusion of the non-scientific audience and the contingencies of communication. Subjects are “at best, sceptic and, at worst, ignorant and insufficiently skilled” (Fleming et al. 2014, p.413).

So both have in common the ‘worshipping’ of Science, the lack of (clear) information as well as the over-emphasis and pressure put on individuals, –who are blithely pointed out– but to the difference of the former, the latter denies agency to citizens.

Turning to the last one, culture of consumption discourse, Fleming et al. indicate that it features the ideologies of consumerism and individualism; capitalism and growth are put on a pedestal. Individual choices are motivated by self-interest and materialist. This discourse is deeply rooted in Western liberal culture and very persistent.

Another author has made a contribution to the study of frames in the environmental field. Shanahan’s research suggests that “complex messages like those on climate change will resonate more with people if they are ‘framed’ to suit diverse audiences” (2007, p.2). A focus on particular

aspect can considerably increase the good reception of a message. The "polar bear frame" refers to the use of emotional speech, for instance to talk about how the melting of ice cap puts polar bears in jeopardy. It is most convincing for animal lovers who get moved by this kind of storytelling. On the contrary the money frame is more appropriate to target politicians and the private sector for who the search for profit is a major motivation to implement sustainable changes in their business model.

Climate change frame	Audience engaged
Scientific uncertainty frame	Those who don't want to change
National security frame	As above, but now inspired to act
Polar bear frame	Wildlife lovers
Money frame	Politicians and the private sector
Catastrophe frame	Those who are worried about the future
Justice and equity frame	Those with strong ethical leanings

FIG. 3: Shanahan's frames of climate change and the audiences most engaged (source: Hulme, 2009)

Post-structuralism is concerned with language, the effects of language and alternative possibilities for thought; therefore applying post-structural theories of agency and change is pertinent to situate the different stakeholders in climate change action. A key contributor to positive change is to recognize the power of language in shaping perceptions and actions, and to proactively and reflexively use language to create new conditions. Once recognized, ideologies can be challenged and recreated so that new constructions of knowledge and more forms of action are enabled. The first step however, depends upon the acknowledgment of the effects of language in particular situations. "discourses do no need conscious articulation. They can be so ingrained and taken-for-granted that it would never occur to anyone to mention them" (Dryzek, 2013 p.52). Lastly, environmentalism is now about half a century old and it should be noted that, environmental discourses still "develop, crystallize, bifurcate and dissolve" (Dryzek, 2013 p.19)

In a nutshell the relevance of cultural textualism (from which poststructuralism is a branch) is that it empirically attunes us to the ways in which knowledge of the world is structured by discourses that reflect conflict over power and it decodes these discourses as politically salient (Agger, 1991 p.125)

'Discourse' has captured the totalizing and semiotic connotations of 'culture', combined it with the Gramscian and Althusserian notions of 'hegemony' and 'ideology', blended it with Lacanian psychoanalytic concepts, tapped into the linguistic turn in literary theory, and then introduced Foucault's historical perspective on power/knowledge relations. 'Discourse' thus retains many connotations of 1970s Marxist and Lacanian theory, but in a way that allows the incorporation of history, culture and both structuralist and poststructuralist insights. It is not surprising that such an all-encompassing term is now associated with a wide range of conflicting and confusing meanings. (Sawyer, 2002, p.450)

Novikau (2016) explains that 'discourse' can be misleading for several reasons (some evoked just above) and the most important is that, despite being mutually connected, discourses are *part of* ideologies and not ideologies themselves. This idea is summarized in the following equation :

Environmental discourse = environmental issue + environmental ideology

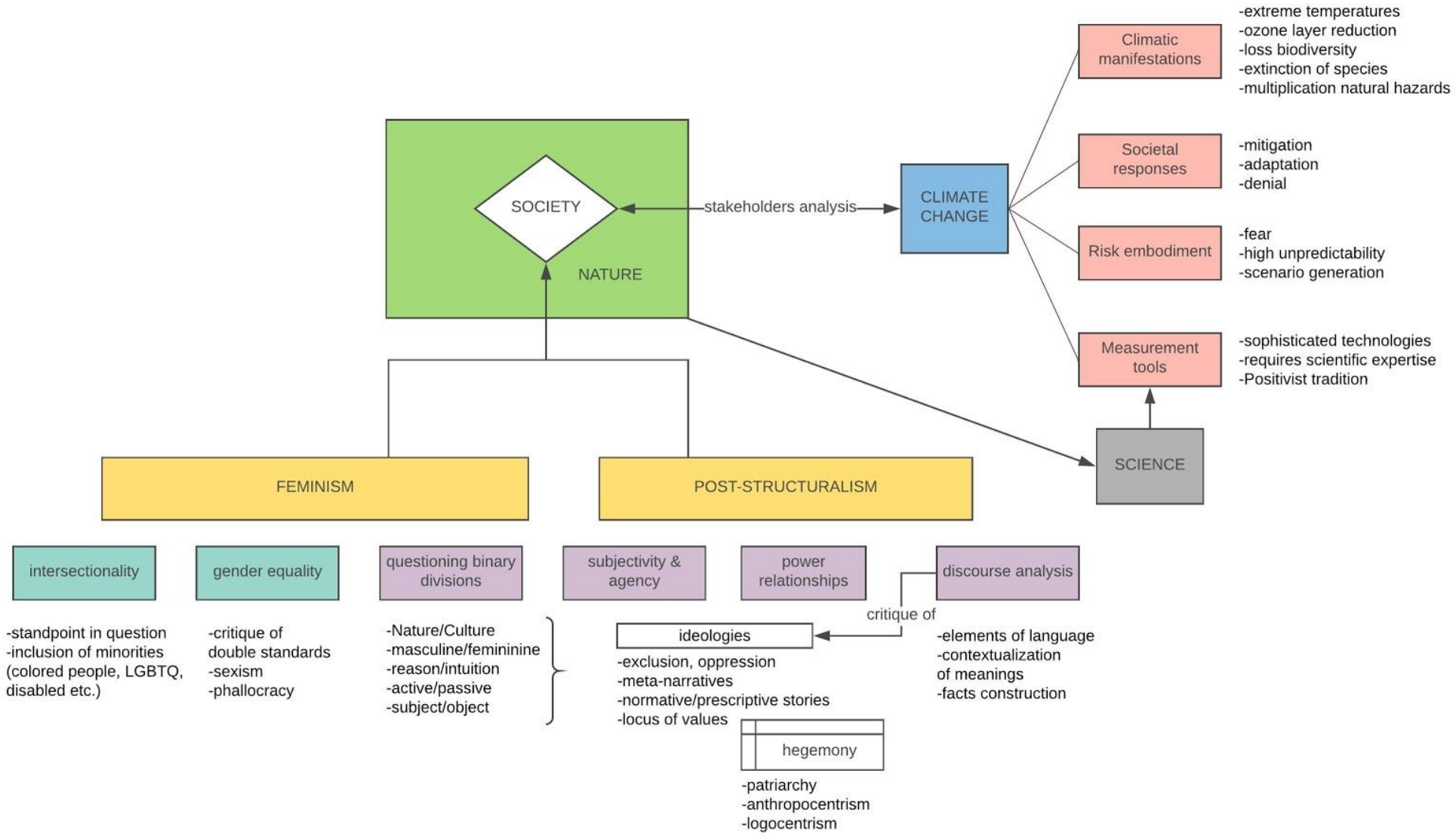
In his definition he makes the parallel with political ideologies, explaining that environmental ideologies reflect locus of values and systems of beliefs, how the world is and should be and the

relationships between Humans and society as well as between human and non-human. Finally "they advocate for action and change" (Novikau, 2016 p.15) and this is because of this point specifically that I chose to include this terminology in my conceptual model.
To me, was self-evident that I would choose the combination of feminist and post-structuralism because I believe that they pinpoint each other's blind spots and reinforce each other's premises.

2.2 Operationalization

The operationalization visually represents the main variables of the research which are the society, Nature, climate change, and the theories used, that is to say feminism and post-structuralism. Feminism and post-structuralism have in common the critique of binary divisions, the study of subjectivity and agency, power relationships and, to a certain extent, discourse analysis (see Judith Baxter, 2003). It can be seen below that I have chosen 2 different colors, in purple the elements aforementioned and in white gender equality and intersectionality which both are thematics peculiar to feminism. Climate change as a phenomena is mainly conceptualized under four different aspects:

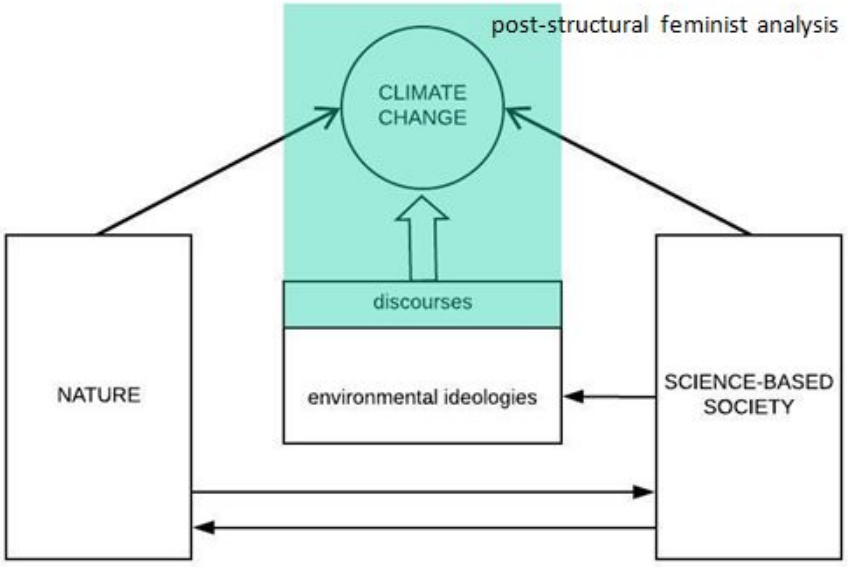
- Its manifestations, which enable us to empirically experience climate change and, as expected, to confirm its presence
- The risk it represents. A risk is defined by the probability of harmful consequences (impacts), resulting from interactions between hazards and conditions of vulnerability (or risk = probability × impact). The assessment of a risk depends on the perceived control we have over the risk and its likeliness to happen (Beck, 1992). Here climate change is negatively seen, triggers fear and the principal answer to risk embodiment is the generation of scenarios which goal is to enhance our capacity to respond (resilience) and therefore reduce our vulnerability to the risk(s).
- The societal responses to such manifestations i.e mitigation and adaptation strategies through the elaboration of laws, international agreements etc. but also the denial and absence of response
- Measurement tools. With 'measurement tools' is meant all types of technologies, devices and approaches that are used to 'measure' climate change, evaluate its drivers, the pressures, the state of the environment (ecosystems for instance), and its impacts. The numerous ramifications of climate change requires very sophisticated technologies and methods that only experts are able to provide us with. It follows on from the positivist tradition.


SOCIETY
NATURE
stakeholders analysis
CLIMATE CHANGE
Climatic manifestations
-extreme temperatures
-ozone layer reduction
-loss biodiversity
-extinction of species
-multiplication natural hazards
Societal responses
-mitigation
-adaptation
-denial
Risk embodiment
-fear
-high unpredictability
-scenario generation
Measurement tools
-sophisticated technologies
-requires scientific expertise
-Positivist tradition
SCIENCE
FEMINISM
POST-STRUCTURALISM
intersectionality
gender equality
questioning binary divisions
subjectivity & agency
power relationships
discourse analysis
critique of
-standpoint in question
-inclusion of minorities (colored people, LGBTQ, disabled etc.)
-critique of double standards
-sexism
-phallocracy
-Nature/Culture
-masculine/femininine
-reason/intuition
-active/passive
-subject/object
ideologies
-exclusion, oppression
-meta-narratives
-normative/prescriptive stories
-locus of values
-elements of language
-contextualization of meanings
-facts construction
hegemony
-patriarchy
-anthropocentrism
-logocentrism

2.3 Conceptual model

The conceptual model derives from the operationalization. We find again climate change, Nature and the society as a variables but here for the sake of simplification I have chosen "science-based society" to emphasize the omnipresence and influence of science at different societal levels, be it in everyday interactions where technology has redefined communication, in the institutions and reflected in policy-making with the support of experts and scientists.

In the operationalization above Society was part of Nature; conversely they are divided here so to stress the dichotomy between the two, echoing the division between Nature and Culture.



The post-structural feminist analysis is sketched with a blue rectangle; we can see that it encompasses climate change and discourses which are a component of environmental ideologies. This choice of the shape also mirrors the concept of 'framing'. Ideologies are, in the end, nothing more than the result of the aggregation of similar ways of thinking and conceptualizing the world, therefore they emerge within the society. But in the case of environmental ideologies they are indistinguishable from the environment, yet there is no direct arrow between Nature and environmental ideologies, it is an indirect relationship because there is a mediation *through* society; society gives birth to ideologies. Perhaps some would object that green radicalism in particular values first-hand experiences and avoid theorizing the eco-connectedness preciously defended by its advocates; still an experience is going to be expressed through language. Language always intervenes, and as a result language rules empirical sensations because it how they are intelligibly translated.

III. METHODOLOGY

3.1 Research design and research strategy

This qualitative research is theory-based and relies on a single case study. The type of case study is both descriptive and interpretive, meaning that it seeks to describe the data as they occur and to extract the phenomena within the data. The interpretive part concerns the analysis which will be conducted by "developing conceptual categories, supporting or challenging the assumptions made regarding them" (Zainal, 2007).

Starting from an ontological position that is post-structuralism and feminism, the aim of the research is to study various individuals belonging to a same distinct population (in this case university students that are Millennials) with different stances on Nature and climate change. Through the interviews the objective was to find different elements of discourses that would reflect how symptomatic our conception of climate change today is.

This research intends to provide an account of our contemporary framing of climate change using post-structural feminism as an analytical lens. In order to do this, it draws on an empirical inductive study which reflects on the theoretical framework and establish a connection with the primary data collected through semi-structured interviews.

3.2 Data collection and analysis

The primary source of empirical data for this research is found in seven semi-structured interviews. The type of sampling is first of all purposeful, as I sought to get respondents from specific study fields, but along the process snowball sampling has also been used once to take advantage of the participants' social network. Secondary data has been gathered through extensive exploration of the existing literature on the topic. It includes looking at the chosen grand theories in detail and questioning their relevance to the topic but also existing studies. In this regard meta studies and size effects shall have priority related to their method which consists in aggregating a multitude of existing studies on one topic and, as a result, turns out to be really useful to synthesize findings and discern trend effects and specific patterns.

Drawing on existing literature and previous studies concerning the framing of climate change and associated discourses, the positivist tenets were expected to still be largely present in contemporary society. The literature has however pointed out that skepticism towards science is more and more expressed, in the media on the one hand but also in people's minds on the other hand (Fleming et al, 2014). From a sociological point of view, some background is later on provided about the studied population which is the Millennials and the research explores to what extent this target group, on the basis of their supposed discernible traits, is more likely to confirm or to disconfirm the prior assumptions one can have regarding their curriculum, for instance students of scientific disciplines having a more positive discourse about science and leaning towards ecological modernization or sustainable development discourses.

The case study has been carried out following different steps:

a) <u>identification of the population</u>

The population that has been chosen is the student population at Radboud University in Nijmegen, a town located in the province of Gelderland, Netherlands. It should be noted that the city of Nijmegen has been since 2016 the theatre of a series of coordinated efforts as part as a candidature for the 2018 European Green Capital, an award that has been discerned to the city after applying three times. Ahead and in the wake of this award, the city has initiated a lot of sustainable projects testifying its ambition and strong commitment. A similar enthusiasm is also witnessed at Radboud University where a group of youth from AGREEn, a sustainable student association, has decided to campaign for an ecocampus.The primary data has been collected through interviews with seven students, along what is recommended by Creswell for a case study (2013).

Targeting students to collect qualitative data has a twofold advantage: to start with, convenience: being a student at Radboud University myself (furthermore studying Environment & Society studies) it definitely helped me to get an easy access to them; secondly, with an age range of the group varying between 18 and 30 years old, they constitute what we call '*Millennials*' (or 'Generation Y'). This segment of the population can be defined in the following terms : Howe and Strauss (2009) say that the Millennial cohort is consisting of individuals born between 1982 and 2004. Other dates have been proposed since and for a matter of simplicity, I will retain the dates proposed by the Time magazine (2013) which is between 1980 and 2000. The Millennial cohort shares a set of characteristics that is quite interesting to look at : they are believed to be "tolerant to difference" (advocating gay rights, and minorities), but also narcissistic, lazy and delusional (Time magazine, 2013), though setting high standards for themselves (Meister & Willyerd, 2010). Related to the environmental cause, a study revealed by USA Today in 2012 indicates that Millennials are less civically and politically engaged and less concerning about helping the larger community than were the Generation X and the Baby Boomers at the same age. A noticeable difference though concerns their opinion about climate change. As a matter of fact, climate change awareness has fallen from 77% of Americans to 57% in 2009, according to a Pew Research Center study revealed by the New York Times (Kopicki, 2014). To compare with other countries, France's awareness percent was 80%, Brazil 79% and China 93% (Ipsos Global Trends, 2014).

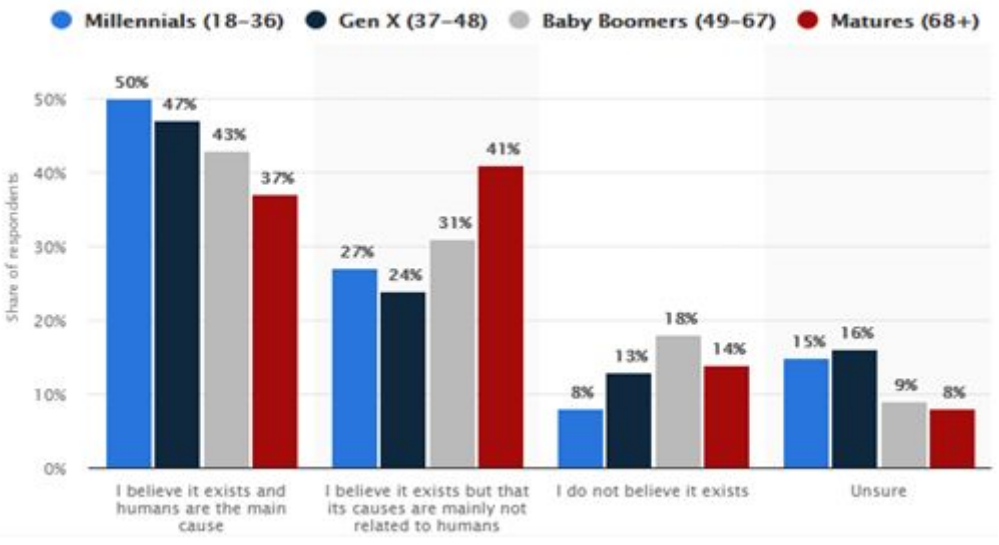


FIG. 4: The perception of climate change depending on the age range (source: Statista)

Secondly, students constitute a population that is well-educated. Here in the Netherlands, due to a selective secondary education, only the best pupils get access to the higher education which being divided into two sorts: WO (*wetenschappelijk* onderwijs, translated by 'research universities') and HBO (*hoger beroepsonderwijs*) which are universities of applied sciences, therefore more oriented towards professional learning. It is more difficult to be accepted at WO rather than HBO because of the prerequisites. Radboud University in particular is one of the best in the Netherlands and has distinguished itself with multiple awards, be it specific programmes or the university as a whole which has recently been rated Best General University in the Netherlands (Radboud University, 2017).

b) <u>data collection</u>

The interviews were proceeded following an interview guide (see Appendix A). The first part is a series of questions about the respondent's lifestyle to get to know them better and have an idea of how eco-friendly they are (for example mode of transportation used or political orientation). This part also permitted to establish a casual context before moving on to more difficult questions. In a way it was thought as a build-up. The second part was oriented towards their vision of climate change as well as an in-depth investigation of the stakeholders. It included questions as "what are the causes of climate change?", "what role can citizens play in the context of climate change ?". On a more abstract level this section also focused on gathering information about their vision of growth, Nature and technology. Last but not least I chose to work with visual data.

This has been motivated by a wish to use an alternative way of collection information from the respondents. Indeed, visual data present many advantages: as mentioned earlier, the legacy of ocularcentrism coupled with the growing apparition of visual technologies (film, television, smartphones...) has established the primacy of the eye as way of knowing. For this reason, the omnipresence of visual data today confers them an important role in contemporary society. They play a major role in popular discourses and reveal important things about societal norms. Accordingly, they make us act and behave in a certain way (think about the power of advertising for instance). In addition, the use of a visual outputs presents a twofold benefit : it enhances the research quality but also strengthens the internal validity of the research as an extra source of data for the triangulation recommended by Flick (2004). I have thought about using visual data in my interviewees the same way as a photovoice. A photovoice is in essence a participatory research where participants are asked to take photographs of scenes related to the research theme. The use of the photovoice permits the researcher to "gain the possibility of perceiving the world from the viewpoint of the people" and that is exactly what I wanted to get from the respondents.

Secondly, I have realized to a thorough analysis of the content of the interviews through discursive analysis. The data collected has been looked at with a post-structural feminist analysis, using a critical discourse: paying attention to the power mechanisms displayed (or hidden), the duality subject/object, the presence of specific discourses and asking about the procedures used in fact creation. For the feminist stance, Stewart (1994), translates feminist critiques and methodology into procedural guides. She suggests that researchers need to look for what has been left out in social science writing.

The first step consisted of open and axial coding using the qualitative software Atlas.ti. Before starting to code I already had in mind the creation of groups based on the five stakeholders i.e. citizens, businesses, the State(s), the scientific community and NGOs plus Nature. Eventually,

with the outcome of the interviews a seventh category has been created which is the media.
Others groups like 'Mindsets' or 'Climate change management' have been created in order to cluster the codes and refine them. In a second time attention has been paid to the different discourses listed by Dryzek (2013). An equivalent number of groups has been created (that is to say seven) gathering corresponding codes. For instance in 'Limits & Survival' can be found the following codes : 'overconsumption', 'tornados', 'biocapacity' and 'feeling of urgency'. These categories enabled me to index the different discourses and to spot codes and quotations corresponding to each one of them (see table 2 p.39-41).

3.3 Generalization and reflexivity

This research being a descriptive case study, the collection of specific observations that I have done through my interviews aims at preparing the ground for discovering similarities or rules. Mayring (2007) explains that "Good descriptive studies try to present the phenomena in a broad range, to explore different contexts and so they have to reflect on later generalizations". On the other hand, it is important to think about the purpose of a generalization. Is it important or necessary for the research ? In qualitative research generalization permits to go from specific observations to the general formulation of a theory which, hopefully, can apply to different cases. But again, what a post-structuralist would argue here is that lifeworld phenomena, how people interact and communicate, always have multiple interpretations which generate an inherent indeterminateness and make generalizations void (Denzin & Lincoln, 2008). In my case, I sought to draw general inferences from my data to lead to a characterization of discourses. These very discourses have now been conceptualized for many years and Dryzek himself explains that it is through the recurrence of elements of speech, practices and production of text that ideologies are revealed. The way politicians speak to the citizens, how governments pursue policies, adverts on TV, awareness campaigns of NGOs, there are as many forums as there are meanings.

Consequently, it is quite likely that the results found can be generalised to across populations even though, as mentioned in the methodology section (part III), studies have highlighted differences between generations and social classes and at a larger scale, between developed and developing countries (Mertig & Dunlap, 2001).

Last but not least is the reflexivity. Creswell (2013) makes clear that "qualitative researchers need to *position* themselves in their writings." Besides, Hammersley & Atkinson (1995) indicate that "one characteristic of good qualitative research is that the inquirer makes his or her 'position' explicit". Throughout my research I have tried to be conscious of how I situate myself in the current debate about climate change, my biases, values, and experiences that might influence my writing, as it is expected from myself. This is of course a difficult exercise because I cannot be objective about myself; however I am very conscious about the environment and it is reflected everyday in my lifestyle, my choices as a consumer, what I eat, for who I vote, my activism etc. If I had to 'label' myself, I think I would fall under the spectrum of the green radicalism environmental ideology. How I position myself is likely to affect my judgment of how I perceive other people. Am I 'better' or 'worse' than them ? People gauge each other because they are looking for approval and validation.

IV. ANALYSIS

4.1 Analysis of the interviews

A consequent amount of similarities between the respondents' answers has been noticed but also differences are interesting to look at. For example the data extracted from an interview with a certain type of student (i.e studying a particular matter like Law or Religion Science) doesn't necessarily "match" with what could be expected in terms of general idea people have about certain studies. I have for instance found that the Religion Science student was pretty critical towards religion(s), declaring himself as "unbound" when asked about his spirituality. However he did express the idea that *"religion has a role to play in favor of ecology".* Also, the student from Law that one could expect to be rather pragmatic and rational, maybe less open-minded compared to an Arts or Social Science's student, turned out to be extremely mindful about the environment, Nature and climate change. He has been a vegetarian for five years and articulated very clever and engaged positions towards climate change managements and his personal view about the different stakeholders.

4.1.1 Lifestyles

The first part of the interview dealt with the way of life of the participant. Respondents were asked questions about their mode of transportation, their diet, their place of living, if they had a job or not and their involvement in the community through student associations or voluntary work for example. Besides, one question concerned their spirituality while another sought to know what their political orientation was.

The most frequently used mode of transportation is the bike, which is not surprising if we consider the location of Nijmegen in a country which is the 2^{d} most bike-friendly European country with a number of bikes exceeding the total population (European Cyclist Federation, 2014). Four respondents indicated an occasional use of car but out of these four only two owned a car whereas the two others would borrow the family car. Respondent V said she was walking most of the time for daily travels.

In terms of diet two respondents are vegetarian (I ; VI) and I have noticed a growing awareness about meat consumption with three others declaring they are considering vegetarianism or at least a flexitarian diet[5] (II ; VII). Politically speaking, to the exception of one respondent who has indicated she wasn't into politics all respondents indicated a left-wing or Green affiliation. As for religious beliefs, most self-identify as agnostic or atheist. One is Orthodox and respondent II revealed feeling connected to Nature and animals.

The results can be found in the table below summarizing the findings. Respondents have been attributed a code, from I to VII to permit individual references when citing or quoting.

[5] see Glossary p.8

Code	I	II	III	IV	V	VI	VII
Studies	Biology	Green criminology	Artificial intelligence	Theology	Business and communication	Law	Physics & astronomy
Age	20	30	20	25	19	21	22
Nationality	Dutch	German	German	Dutch	Romanian	French	Dutch
Place of living	Flatsharing	Own studio	Flatsharing	At parents	Flatsharing	Flatsharing	Own studio
Political orientation	Left wing, Green	Green	Left	Socialist	x	Left	Left-center
Religious affiliation	Atheist	Agnostic but feels connected to Nature & animals	Atheist	Unbound	Orthodox but doesn't practice	Agnostic	Atheist
Mode of transportation	Bike	Bike	Bike	Train	Walk	Bike/car	Bike
Specific diet	Vegetarian	Flexitarian	x	x	x	Vegetarian	x
Job/voluntary work	- AGREEn - Student association member	AGREEn	- Teaching assistant - Student association member	Gives talks for a community center	x	x	- Board member of Dito (LGBT organization) - Teaching assistant
Ecofriendly behaviour self-rating	3.5	3	2	4	3	3.5	4

TABLE 1: summary table of the seven respondents (source: author)

Finally, the interviewees were asked to place themselves on a Likert scale ranging from 1 to 5 with the corresponding grading for their eco-friendly behavior :

1 = very little
2 = a bit
3 =moderate
4 = consequent
5 = a lot

4.1.2 Views on climate change & stakeholders

The panel of respondents made clear that climate change is human-induced. Greenhouses gases are mostly evoked (3 instances of greenhouses gases, 8 of CO2). Pollution is also redundant (8 instances).

The opinions diverge more about who is responsible : some gladly accuse their peers, pointing at a lack of will, disinterest from the public for environmental issues but the following constitute limits: busy daily lives of people (no time to think/ to inform themselves); not enough alternatives in terms of product (for instance one interviewee mentioned the omnipresence of plastic) and together with that, feelings of powerlessness, discouragement, hopelessness as well as skepticism towards the goodwill of other fellow citizens and even more towards other actors like the government and the industry. They pointed at flaws to the "system", a lack of "framework" (VI) and disparities in terms of what is available depending on where you live (like different bins to recycle or public transport to cite few).

It has been emphasized that information plays a key role related to green and climate

change awareness and the role of the media to this regard is also underlined (V, VII). Furthermore some respondents mentioned the fact that it should be the change should be initiated through role models (V); should be seen positively; should be encouraged within the society and in the media; should be constituted of "simple" and "easy" actions that can be implemented in "daily life" (II, VI) and many evoked the important role a citizen can play as a consumer in terms of choice (being a vegetarian, eating organic...). "Step by step" or "progressive" have been evoked so that the change could be successful and these answers were coming from the respondents who also said that climate change management should not be radical but moderate (II, V). One argued that radical change would lead to resistance and that resistance would be a worse problem than climate change itself and, as a consequence, will result in failure. In her view successful change is a long-term process *"take a few steps ahead but also accept few steps back"* (II). Others (interestingly the scientific students) talked about a radical management, invoking urgent action (I, III, VII).

To sum up, respondents underlined that citizens have an active role to play and should have an active interest in climate change but we are not all equal and both disparities between developed and developing countries as well as social classes have been raised. On this last point, respondents I and IV think that developed and developing countries have things to learn to each other and that they should collaborate together for help. The biology student added that previous mistakes should be avoided. Through this idea one can recognize one of the sustainable development's principles the growth in the Global South cannot be the same way as it happened two centuries before in the Global North (Dryzek, 2013). It is impossible not to be reminded of what Hulme (2009) stresses when he evokes conflicts between climate change and development "promotion of developed-nation exports and cultural dominance is frequently given priority over the local development needs of the recipient communities" (p. 277).

Among all stakeholders, the industry is most blamed: all respondents believe that corporations are reluctant for reasons like the continuous search for profit. Making sustainable change is still believed to be costly and consequently, businesses have no interest in changing unless they are "helped" or "forced". On this point, the majority of them also agreed that coercion is necessary, despite few examples of good initiatives and emphasizing that a new green consciousness is also spreading in the marketplace (VI, VII). Businesses and at a larger scale, multinationals and some sectors like the food industry are seen as powerful and strongly impacting the States through lobbying in particular (II, VII). Reciprocal interest between the two stakeholders is organized around investments and bonus (III, VI). Taxes are repeatedly exemplified to put pressure on companies and they are believed to be successful (VI, III).

In parallel, the State is considered to be the most legitimate actor for many (VI) but not necessarily the authority they would turn themselves to: NGOs have been emphasized for their greater independence vis-à-vis other actors (II). One respondent thinks that experts are the most apt to provide reliable information and inform decision-making while another emitted doubts about whether people would really "listen to scientists" (I) and said an advisory role to politicians was the best option in his view. Although governments are still trusted to represent citizens, the respondent from Romania gave thought-provoking insights about corruption in her country, as a reminder that not all nations are equal in terms of democratic regime but also human rights.

In general, the role of the government was tied to its coercive capacity and its vast resources to, firstly provide citizens with adequate alternatives for consumption and production and secondly, better raise awareness among the greatest number. Examples involved free public transport, more vegetarian meals in school cafeteria or the creation of natural protected areas. The

advocates of green consciousness strongly believe that change is a bottom-up process and that individuals must change their perception about the world. The individual is the key to change, stressed by respondent IV who answered “yourself” to “What authority would you turn yourself to?”. He explained that, to him, authority figures should not even be a thing. Green advocates can be enlightened by their peers (Dryzek, 2013), but do not trust institutions or companies.

The interviewees were asked about the role of the scientific community and experts and also the role of technology in context of climate change. By common consent technology is mainly seen as positive, research brings innovation and new sustainable products (like hybrid or electric cars). The role of scientists is to “discover more things” (V, VI) but the analysis highlighted contrasting views about how it is currently done: Respondent IV cautioned against experts being politically involved and rather expressed that they should solely express facts and not “the way we should change”. He indicated that the communication of scientific information was flawed because not effective, not always objective, something respondent IV also agreed with :

I think the problem is also that generally speaking, the media doesn't really go along with scientists' nuanced view. So there's always a mismatch whenever you play the scientist in a news program or in a talk-show. I always see a struggle with scientists trying to be nuanced but being pushed into making bold statements. (VII)

Sometimes in talk shows they extrapolate like crazy <laugh> "yeah you need to change otherwise you're going to die", that's bad thing, I think they need to relax and just tell what we have to do to change but it has to be from the bottom up. (IV)

Objectivity and independence were put forward to preserve the integrity of science which fundamental tenets –according to Merton– are skepticism, universalism, communalism and disinterestedness (1973).
Here emerges the paradox: respondents agree that technology is a great tools insofar as it has resulted in the creation of the Internet, social media and smartphones but there some also share the idea that technology has also been a driver of for climate change, especially during the Industrial Revolution according the respondent I.

Parallel to that there is a suspicion about the distortion of scientific facts. As implied by respondent VII, “in order for the media to keep existing people have to watch or read”. This obsession of getting views and likes manifests itself through clickbait, catchy headlines and forceful opinions. Or, the media have a considerable impact on the public’s opinions of Science and technology and the way a scientific piece of information is reconstructed and presented actively shapes the framing of climate change (Carvalho, 2007).

To this regard, the discourse of fear is particularly potent. The analysis of the primary data revealed that the discourse of fear has largely contaminated the media and is quite ingrained in people’s minds. Mike Hulme in his book *Why We Disagree About Climate Change* retraced it to early 70s with abundant publications about the environmental risks such as the famous Club of Rome’s *Limits to Growth* (Meadows, Meadows & Randers, 1992), but also Schneider’s *The Genesis Strategy : Climate & Global Survival* (1976). The lexical field of climate change was soon suffused with alarmist repertoire with words such as “catastrophe” or “chaos” and now evoking the melting of the ice cap, the multiplication of natural hazards or the increase in extreme temperatures is usually associated with bad news and anxiety about the future. The range of feelings discernible and/or expressed during the interviews goes from feeling depressed, anxious, pessimistic, negativity and discouragement. Respondents I, II and IV clearly expressed doubts about our capacity to thwart the

effects of climate change.

A noteworthy observation of respondent III concerns the fact that she does not understand the process from theory to practice, or, in her own words the “translation”, “concretization” of “abstract things” (i.e. theory). To her, obviously, it was not about pragmatic knowledge and she also spoke about her impression that scientists are “a little bit lost in their own world”, a thought also shared by respondent VI who agreed they were too far from the people.

An in-depth look at the information gathered through the interviews reveals the predominance of certain mindsets (see table 2 p.39-41) For example the notion of balance with eight quotes associated to this concept which illustrates the fact that managing climate change falls under the quest for a fair in-between; a compromise between the interests of one and another and here specifically between Nature & the human presence and activity on Earth. “Finding the right balance” is recurrent (II, III, VI, VII) and denotes this idea of harmony and middle ground. This also is an indicator that no extreme position is held.

A map of the different stakeholders according to the interviews’ data analysis can be found below with actors being placed according to structural and strategic power.

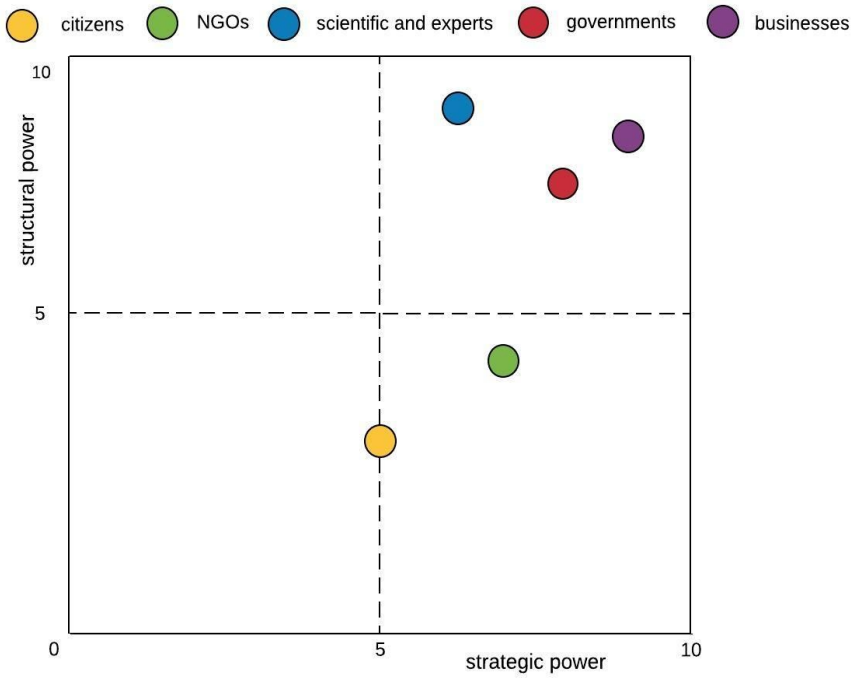


FIG. 5: stakeholders map related to climate change action and management (source: author)

4.1.3 Views on Nature & non-human species

The interest of the people is often evoked by the interviewees (four times) and is revelatory of how human beings tend to put themselves as well as their interests first. One participant (VII) was however very conscious of this, mentioning our own selfishness, but he also showed that he was very aware of the survival stake and, in spite of climate change, revealing a surprising resigned attitude: “Other species will thrive in this climate but it won’t be us”. This same respondent explained this by the immutable character of Nature and the natural cycles that have been going on ever since the creation of Planet Earth.

Generally interviewees agree that Nature is something that we should protect and preserve

as well as they qualify it as “beautiful” but they called upon different motivations: an utilitarian view about Nature encompasses Nature as a labour, a resources haven, for wood especially (IV, V) but also for pure air and freshwater (V).

Another convergence was about the recreational view of Nature (I, V), enjoying green spaces, hiking or travelling. Different animals are evoked by the respondents to talk about the ecosystem and the interconnectedness present in Nature. Meat often comes back related to environmental impact. Among all, three respondents stood out by the eco-friendly awareness which could be qualified in some ways of green consciousness according to Dryzek’s discourses classification (2013). Green consciousness includes a fundamental recognition of Nature’s inherent value as well as the ecosystem constituting it, including all living creatures. They think that a change in ideas is the key to change the world (Dryzek, 2013). Respondent II displayed beliefs leaning towards deep ecology in the sense that green radicals believe that the natural order has been “violated by humankind, [...] through anthropocentric arrogance, patriarchy or industrialist indifference” (Dryzek, 2013 p. 198). Respondent II used the word “anthropocentric” while respondent VI criticized how human beings consider themselves as above other species. He also mentioned the fact that “Humans think too much that Nature is here for their purpose but instead we should rather think that we’re here to serve Nature”. The lack of awareness about the fragile harmony of the ecosystem was highlighted by respondent IV in these words :

You need trees to make like a table then this is a problem because then they just see trees like.. yeah products for um.. a table and not for like for.. taking the CO2 out there, for the insects that live from that er tree, you're not seeing the whole framework of the ecology system.

Furthermore his way of putting forward real experiences to witness the interconnectedness and the recalled me how the ecofeminist Julia Russell suddenly became aware of the living character of Earth as she was contemplating her compost pile (MacVean, 2010). Likewise respondent IV said :

I think just changing your perspective about Nature, about just going and walk in Nature and see how animals interact with each other and Nature not just documentaries about it, just go in the Nature and see how everything is connected.

A network of the conceptual code of Nature can be found in Appendix C, illustrating the ramifications of the codes with illustrative quotations.

4.1.4 Reflection on visual outputs

Visual data constitute an exceptionally powerful means. As put by Wang & Burris (1997) photographs “may fuel critical consciousness and collective action by making a political statement about the reality of people’s lives” (p. 371). The use of visual data has been thought in a way that allows respondents to share insights and new perspectives about my research themes (Nature, climate change, environmentalism, etc.). The intention here was pattern-matching with the rest of the data and additionally, it gives me extra information to do my classification of discourses.

The results obtained from the experiment turned out to be really satisfying. It presented a twofold benefit that is the voicing of individual and collective experience. For some pictures the respondents would rather use the first person singular as respondent VII who said about picture 5 (see Appendix B) “it is esthetic but it doesn’t resonate with me” or for picture 7 he expressed his wish to live in that kind of futuristic city. For most cases, it was general speech using “it” or “you”, more rarely “we”. What follows is the synthesis of the reactions provoked by the pictures. Because respondents were only asked to comment the ones they wanted to I did not get feedback on all of

them or little for some of them; for this reason I will focus on the ones which were the most thought-provoking.

The most commented picture was the image of the Earth as a bomb (see Appendix B picture 3) It triggered vivid and contradictory opinions with, on the one hand respondents I and IV disagreeing with the usefulness of such a picture; respondent I ironically commented "yeah we know there's a problem, alright, and I think it's more effective to communicate with something more positive", on the other hand others finding that the metaphor was particularly adequate: "it's really like a bomb, you never know when it'll explode" (V), "accurate metaphor" (VI) or respondent III who showed perspicacity saying "I if were working for a media company I will probably pick this one [...] you can make good money with it". They argued that it was conveying the feeling of urgency and found it powerful.

In second position the picture 7 (a futuristic Paris as 'smart city') also sparked interest; the majority of the participants were enthusiast to the idea of such a project, especially scientific students: "it shows how to organize the world in a way so that we incorporate the human part harmoniously" (III), "it's always nice to see sustainable solutions that are good-looking" declared respondent VII, adding that he would like to live in a world like that. The critiques were emitted by the two female respondents (II, V) who qualified it as "artificial", doubting if it was "real nature" (related to the vegetation in the landscape). At the opposite, respondents were also shown a picture of a landscape with mountains and a lake (Appendix C picture 6). They qualified it as "beautiful" (VII, VI) agreed that natural landscapes like this need to be preserved. Respondent VI added that it fitted his representation of Nature while respondent II who qualified the previous picture as "artificial" and "man-made" thought that this was the complete opposite. When I argued that maybe the lake had been dug by people, she was circonspect.

This demonstrates that the vision of Nature in most opinions remains this idealistic vision preached by Romanticists, i.e a virgin, untouched piece of land where human activity is invisible, "somewhere [one] can sit and be all calm and peaceful", according to respondent V.

4.1.5 An attempt of classification into Dryzek's categories

I now turn to an attempt of classification of the discourses based on the data collection. The conceptual coding previously done enabled me to create different categories, evoked a bit earlier in the Methodology section (part III p.28).

In his book The *Politics of the Earth* (2005) Dryzek explores the variety of environmental discourses present in today's society. As one can expect, people cannot be put in a box that easily because it is the very essence of Human nature to be full of contradictions. Individuals have complex and multi-layered identities; as Dryzek notices, one can be a green radical in his activism meanwhile being an economic rationalist when it comes to buying. However, he established some profiling, based on what basic entities are recognized or constructed; the assumptions about natural relationships; the agents and their motives and last, the key metaphors used in discourses.
As one can see the respondents are fairly distributed among the seven discourses. However one aspect must be borne in mind : the multiple questions during the interviews led the participants to talk about how the world is right now; doing so they also talk about themselves but in no case it can

be deducted that because respondent VII expressed elements of language corresponding to the Promethean type of discourse that he or she *is himself* a Promethean !

Features / Type of discourses	Basic entities recognized	Assumptions about natural relationships	Agents & their motives	Key metaphors
PROMETHEAN	**Denial of Nature only seen as a brute matter** **Growth = good** « we're growing more and more and evolving » (V) « good ideas [...] a lot of innovation » (III) **Markets** (III) ***Consumerism** (II) ***Business: search for profit** (I, VI) **Energy** (I, VII) **Technology** (VII) **Humans** (VII)	**Humans over everything else (anthropocentrism)**	**All stakeholders are present but act in their selfish material own-interest** « for selfish reasons » (VII) « people clearly don't care » « some people they will do anything to get money out of you » (V) ***State: reluctance** (V, VI) ***businesses: reluctance** (all respondents) « they will pull out a lot » « [...] unless they're helped or forced »	**Mechanistic view of Nature** **Trends** « It's like a trend now to have a car »(V)
SURVIVAL AND LIMITS	**Finite resources** (II, V, VII) « water [...] you cannot get it back » **Carrying capacity of Earth; planet boundaries** (VII) **Overpopulation** (VII) **Elites** (I, II, VII, III) businesses have a lot of power »	**Conflict** « humans VS Nature or humans VS world » (III) **Hierarchy & control**	**Elites** scientific elite (IV) **People have no agency** « people are being used like in a game » (II) « puppets » (VI)	**Apocalypse, chaos** « tornados » « refugees » « rise of the water level » (III, VI, V) **Spaceship Earth** (III) **Doom & redemption** « other species will thrive in this climate... but it won't be us » (VII) **Planet as a bomb** « you never know when it's gonna explode» (V) « we're gonna be too many, we polluted too much, killed too much species... it's gonna get out of control » (VI) **Humans = cancer** « we kill everything » (V) « they wipe out animals » (II)

ECONOMIC RATIONALISTS	**Liberal capitalism** **Administrative state** « controlling factors » (IV, V) **Experts** (VII)	**Experts & managers control State** « experts might be the better placed to advise politicians » (VI, VIII) **People = subordinate** **Nature = subordinate**	**Experts & managers** **Public interest**	**Navigating & steering** « navigating » (III)
ECOLOGICAL MODERNIZATION	**Capitalist economy** **Nature = provider of resources** « Nature is more like a labour » (II) **Primacy technosciences** **technocracy** (VII)	« a lot of direct use of Nature has been replaced by technologies » (I) **Partnership between actors:** cooperation (I, IV, VI) « collaboration between the different stakeholders » **compatibility environmental protection – economic** prosperity (IV, VI) « you can do business and protect the environment » but… **greenwashing & whitewhashing** (III)	**Partners; motivated by public good :** « community », « society », « in the interest of citizens » (III, V, VII)	**Connection to progress** **Reassurance :** *positive, *hopeful « there's still some time left » (VI) « faith in people » (V) **'ecologizing the economy, economisizing the ecology'** **modernization** "smart city" (VII)
SUSTAINABLE DEVELOPMENT	**Acknowledgement of the noxious effects of uncontrolled growth** « the same mistakes will be repeated [if developed countries don't help developing countries] » (I, IV) **nested systems**	**Environmental protection** (VII, VI) « planet's well-being » **Economic growth** (all respondents except II) **Distributive justice** **Long-term sustainability** (I, VI, VII) **Renewable energies** (I, VII, VI) **Hybrid/electric cars** (VII, VI)	**Supranational agreements** *United Nations (VI) **Citizens participation encouraged** (I, II, IV, V, VII) « citizens have to keep an active interest » « [citizens] have the most important role to play » **Green businesses** (VII, VI) « align interest of businesses with people's »	**Nature = natural capital** (I, V) « we need trees for paper » « recreational thing […] hiking » **Reassurance** cf. above

GREEN POLITICS	**Global limits : biocapacity** (VII), **natural resources exhaustion** (V, III), **limits to growth** **Complex ecosystems** (IV, II, VI)	**Equality among people** **Complex interconnection between Humans & Nature** *Connection with Nature	**Plurality of actors, multidimensional motivation :** NGOs + « change from bottom up » (IV) « society as a whole » (II)	**Link to progress** « we can always be better and improve things » (IV) **Social learning : the role models** (V) the **importance of information** (V, III) and **education** (VI, VII)
GREEN CONSCIOUSNESS CHANGE	**Limits to growth** cf. above **Degrowth** (II) **Ecofeminism** (IV) **inherent value of Nature** (I, III)	**No hierarchy between Human and non-Human** « we're all the same » (VI) **Violation of the natural relationship between Humans & Nature** « use those natural resources […] take them from somebody else somewhere else in the world […] it's wrong »	« all the species have a role to play » (IV) **Connection with Nature; care for it** « We should be here to serve Nature » (VI) **Humans, some more ecologically aware than others** « really green people who want to change the world » (II, V)	**Biological & organic metaphors** « they just see trees like yeah products for a table and not for […] taking the CO2 out there, for the insects that live from that tree, you're not seeing the whole framework of the ecology system » (IV) **Emotions, intuitions :** « Deep down […] we all have instinct. You have to feel it on your own » (V)

TABLE 2: classification into Dryzek's discourses (source: author)
NB: what is written in bold corresponds to the features evoked by Dryzek in his book *The Politics of Earth.* Words with an asterisk in front of them are codes from Atlas.ti.

The notion of ideology as a coherent and organized set of beliefs does not imply that ideologies are consistent systems. In fact, they may include elements that contradict each other because ideologies are socio-psychological systems rather than logical ones (van Dijk, 2006). The term ideology is usually not applied to the personal beliefs of individuals. Although it is possible to talk about individual belief systems, ideologies rather represent a group, be it in institutional, social and/or political structures (van Dijk, 2006). However, one can identify fundamental concepts in individual belief system and, in a second time, formulate hypothetical environmental ideologies that are typical for a certain group. But because ideologies usually target large popular audiences, people rarely express their in person to-person communications (Sarewitz, 2004).

Putting someone in a case is, as I previously mentioned, very difficult. On this foundation, the reliable indicators stem from their vision of the stakeholders, the type of management required from climate action and aside, their own lifestyle. Below I have order the data from the interviews so that it is sorted out and illustrate the essence of the discourses proposed by Dryzek (2013). Nonetheless, few profiles can be established: respondents II, IV and VI had the most important number of responses in the discourses belonging to green radicalism (which features green politics and green consciousness change) (Dryzek, 2013). They appeared as very concerned by environmental issues, aware of the difficulty of the problem due to the involvement of many actors -though at different levels. With no surprise the interviewees who had the most positive discourse about experts and scientists were the students from physics & astronomy (VII) and artificial intelligence (III). The latter especially made an interesting comparison when asked about in what ways his background could have influenced his perceptions and current values about the environment. He said that "in artificial intelligence especially uh we look at really complex systems

and you don't really know what is going on [...] I feel like it gives you a kind of humbleness when you're confronted to complex systems so..”

Logical action discourse and complexity discourse (Fleming et al, 2014, see p.23) are the ones where scientific authority is most valued, scientists and experts are seen as the only correct source of information (persuasion) and that climate change as a new risk with high unpredictability requires science as for measuring phenomena, predicting scenarios and solving issues and it results in a categorization of people according to their degree of knowledge (the ones who know versus the ones who don’t know/can’t act on their knowledge).

V. CONCLUSION

5.1 Discussion of results

The purpose of this research was to investigate the framing of climate change with the help of post-structural feminist analysis. To achieve such a goal, first I have described the key concepts and articulations of the research with the help of a historic timeline and in a second time, I have presented the different types of discourses enumerated in the literature. Finally, the data analysis of interviews executed in the research showcased correlations and resemblances as specified in part IV.

The primary data revealed that the three discourses outlined by Fleming et al. (2014) are indeed current and tenacious for it concerns the culture of consumerism discourse. That is the one most referred to by the respondents. Together with their vision of growth, what can be deducted from this observation is that the current capitalistic system remains dominant and its effects are often subconscious. Growth and development are still largely associated with a better life and considered as a sine qua non condition for a healthy economy, full employment and diverse opportunities (Hulme, 2009).

As consumers though, respondents emphasize the reluctance of people and the obstacles they encounter themselves daily. This refers to what Norgaard (2011) calls the *social organization of denial,* i.e. people who do not accept personal responsibility for climate change and who refuse to feel guilty about their lifestyle and/or involvement in the related environmental issues. Moreover, moral imperatives are unlikely to be effective; in fact they seem to trigger even more resistance (Fleming et al. 2014) as stressed by respondent III: "change needs to come from society [...] people are not willing to change, they are willing to change small things but not like that the government would say *« 3 times/week you're not allowed Monday Tuesday Thursday you're not allowed to have meat »* yeah even if you want to control it I think the negative feelings would be overwhelming"

Interestingly, the respondents point out "the system" as a powerful and influential actor. "It's how the system is made" noticed one interviewee, underlining the fact that some overarching structure compels people to act in a certain way, to 'abide by the rules' so to speak. Undoubtedly this 'system' includes big corporations and political actors who both score high in terms of structural and strategic power, as shown in the stakeholders analysis (fig. 5, p.35)

The feelings of powerlessness and discouragement indicate citizens feel like useless subjects, passive actors who are subjects to the goodwill of the elite –or "capital elites" as understood by Gould, Pellow, & Schnaiberg (2004)–. Here it shows that the power relationship is unbalanced with little agency for citizens, also emphasized by respondent V when asked about the role of citizens : "they do what they *can*".

On the vision of Nature no surprise either. What I collected from the interviews echoes Haraway's words (2004) when she said that today we still see Nature as a treasure to fence ("precious", "beautiful"); a physical place to go for tourists ("recreational use", "hiking"); a storehouse ("we need trees for houses", "water", "agriculture") or a bank, in the way that its diversity must be collected. The students interviewed attribute a value to Nature and with few mentions of an

inherent value in a discourse which distinguished itself as green radicalism. But If we unveil the obvious care about the planet showed by the participants we discover that behind prevails an anthropocentric view.
Ecofeminists have made it clear that conceptions of Nature under the form of reification and possession are problematic and harmful. On the other hand, it seems like people find hard to move beyond such notions and struggle to come up with a fairer understanding and appreciation of Nature as it is.

Concerning the eco-friendly behaviour of the respondents we observe that in average they rated themselves quite high (average is 3,29), although discernible sustainable practices are not so obvious. Meat consumption for example. We have known for a long time that the livestock constitutes a major stressor on many ecosystems and on the planet as a whole (Steinfield et al., 2006). More and more articles, publications and documentaries have contributed to raise the public's awareness about the disastrous impacts of meat industry (*Cowspiracy: The Sustainability Secret* by Kip Andersen (2014) is seen as an eye-opener in this respect). Yet, the proportion of vegetarians and vegans remains marginal. As of now social scientists have put their finger on what explains such a gap between environmental awareness and pro-environmental behaviour. Bamberg (2003) observed a weak direct relationship between environmental concern and specific environment related behaviour. As shown below behavior depends on multiple factors. The attitude is of course obvious but the subjective norm as well as the perceived behavior control are also strong variables which either encourage or discourage the individual to take action, depending on how she or he feels about them. According to Schultz and Oscamp (1996) it is easier to report environment friendly behaviour than to practice it, on top of that Sundstrom et al. (1996) have found that conserving behaviour is uncertain despite high environmental awareness.

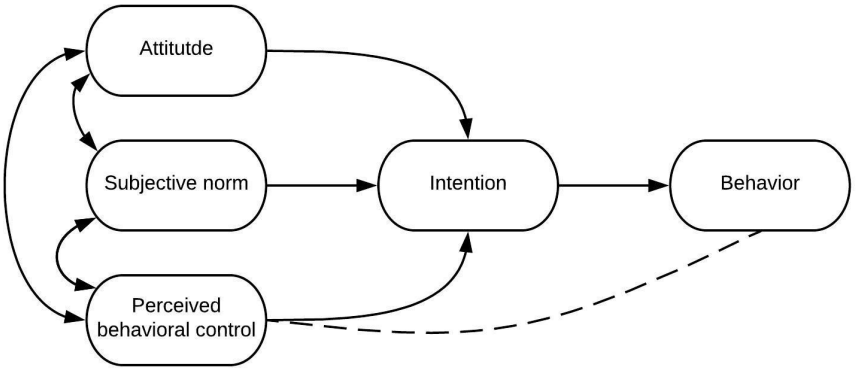


FIG. 6: theory of planned behaviour by Azjen, 1985 (source: author)

Finally, the conclusion about the scientific framing of climate change is that it depends very much on what model is adopted: most Western societies today have opted for a technocratic model where scientific and experts discover the problems of climate change, identify solutions and over a second phase the facts told by the scientific community are relayed by the media and politicians. Hulme (2009) indicates that the communication of risk and in particular how science transmits knowledge to the public is ambiguous because it goes through many channels where one 'fact' is going to be filtered with some its aspects amplified, downplayed or completely left out.

There is certainty however, that the criticism towards the scientific community evoked by the respondents is a sign that the hegemonic science is enfeebled.

5.2 Reflection

The first subquestion, *"in what ways have modern sciences shaped our vision of Nature ?*", has been answered with the desk study which explains through a chronological order how the Scientific Revolution has influenced Nature and shaped our contemporary conceptions of the environment. The second subquestion, "*how this is related to the discourses around climate change ?"* is addressed in the analytical part where a parallel is drawn between the data gathered from the interviews and the theoretical framework, connecting the study of technosciences over time, the deconstruction of positivist tenets and the influence of frames and discourses. It suggests that, as discourses are part of (environmental) ideologies, they emerge within and are shaped by societal changes. Science becoming all-powerful, our view of the environment has been transformed. I have evoked in particular how mechanism, in its quest to dissect natural elements, has systematized references to mechanical and/or chemical processes and extended the analogy to Nature as a whole. Mechanistic views have altered our relationship with Nature and widened the gap between humankind and Nature and reinforcing the dualistic vision of Nature versus Culture. Notwithstanding the environmental movement as well as ecofeminists have been striving to bring back holistic ways of knowing, advocating a betterment of our understanding of Nature but also animals and plants that would benefit both people and the environment.

With climate change being a very complex, multi-layered and polymorphous phenomena, scientific expertise is like the light guiding us in the dark; glasses through which we decode and understand reality. No doubt that without science, our understanding of climate change would certainly be where it is today. However, scientific knowledge and investigation are like a double-edged sword.

Over time science has become more complex and so have humans. The world is constituted by people as they apprehend it, talk it, write it, paint it and argue it. This instability in the human sciences due to the complexity of human beings is the major theme of postructuralism which strives after a more appropriate way at looking at the world to apprehend reality avoiding the realist pitfalls. Feminist perspectives have been a lead to poststructural theorizing, but it permitted to shed light on power relations, discrimination associated with race, gender, class or sexual orientation (Haraway, 2004). Without a doubt, the greatest strength of feminism is that it thrives through its various branches and reinvents itself everyday in the light of occurring events. Hereunto Haraway has declared that feminism took us further than science ever has (1985). Barthes and Foucault have focused on how texts and discourses produce objects which seem "solid and unproblematic" (Potter, 1996, p.101). But to deal with this ever-changing world we might new critical ways to look at it. We need to analyze the standpoints. We need a complex dialectic to go further the sometimes too simplistic generalization.

With this in mind, conversation analysis appears as a solution according to Potter (1996). It "provides the final story of how fact construction gets done" (p.102). Unlike linguistic and post-structural stories of construction it answers the why and the how of factual description. Because experience and interpretation of experience is produced through cultural narratives conversation analysis offers a new perspective do delineate and unravel environmental ideologies and more specifically how rooted in science they are. Latour & Woolgar (2013) remind us that

scientific activity should be seen as a system of beliefs with distinct oral traditions and specific culture practices. It also supports the claim of Alaimo & Hekman (2015) who argue that the nature of science requires looking at the junctions with philosophy, literature, politics and popular culture. Ecologist movements and the post-structuralist school of thought both intend to overturn old hierarchies and combining the practical experience and insights that environmentalists usually have with the complex theoretical scheme that has been developed throughout the years by theorists, philosophers and social scientists there is hope that a more inclusive type of knowledge obtained from expertise grounded in daily experience can emerge and offer an alternative to hegemonic discourses. At the end of the day, with climate change being one -if not- the biggest threat we are facing today, environmental justice is making a comeback and I am utterly convinced that post-structural feminism can contribute a fair deal to the understanding of epistemic claims and significantly steers further research and advocacy as well as policy-making (Ottinger, 2017).

5.2.1 Limitations

Throughout my research process and the writing of this thesis a lot of changes have naturally occured, some being necessary as I reconsidered what I wanted to investigate. For the collection of data, I first got in touch with the student association AGREEn. I had planned to make observations and to participate to their projects to get valuable insight and add up to the interviews conducted besides, nevertheless it meant spending more time on the field and my time was pretty limited.
About the selection of the respondents it should be noted that when I selected two respondents from AGREEn I could already forecast they would show more eco-friendly traits than the average because of their activism. At the end of the day, I was satisfied with my selection of students but a larger panel of students would be interesting, including for example history, medicine, administration or management students.

Looking back at my interview guide, I do have few regrets. First, I wish I would have brought up the feminist topic one way or another; second it would have been more accurate to ask them to position themselves personally as stakeholders, what are the obstacles they face in their purchases. The main issue is that there is quasi-perpetual confusion about their respondents, their views and how they place themselves. Doing a survey with multiple choice answers and precise questions concerning the aspects of their lifestyle (diet, mode of transportation, political preference etc.) would have given me real information about themselves and the motivations behind such decisions (or the absence of decision). For example, all respondents but one have indicated using the bike for most of their travels. But why is so ? Is it because it is cheap ? Is it because they do not own a driving license ? Or is it because the Dutch culture values and encourages cycling ? In the last case this would refer to the subjective norm in Azjen model, (see fig. 6 p.43). So a lot of dimensions about the way of living and the sustainable behaviour remained vague, if not completely uncovered. As a consequence, this also impacts the correctness and, to a larger extent, the validity of the research.

5.3 Recommendations for further research

The initial research proposal included a part about environmental policy-making and decisional process but it was frankly way too ambitious considering the time allocated. The discourse analysis is relevant to identify environmental ideologies which should be taken into account for policy-making guidelines. Despite the precision and the accuracy with which Dryzek (2013) has classified environmental discourses, many questions are left, as Tuler (1997) notes: who uses these discourses, and in which contexts ? Are they used in a strategic, reflective or exemplary way ?
Moreover, considering the fact that they overlaps often occurs, its is important to know which discourses are more revealing, useful, or insightful for certain kinds of environmental policy arenas. The research can be improved by adding quantitative methods i.g statistics to know more precisely what are the proportions of the different environmental ideologies, which ones are the most widespread, the most relayed in the media ?, is there a discrepancy between the core values and principles of the ideology and the way its advocates live, connect and talk about it ?

Lidskog reveals that science is co-produced with policy; the elaboration of scientific knowledge and expertise is linked with the wish to “construct policy-relevant science and influence policymaking” (2014 p.683). The completion of a policy is subject to interaction and negotiation between various actors along the process. However, despite the considerable threat embodied by climate change which urges policy-makers to take action, we must not lose sight of the need for knowledge brokers who can translate knowledge to different communities and package it “in a way that mes it both credible and meaningful to these communities” (Lidskog, 2014, p. 684).

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Appendix A : interview guide

1) about the respondent

-age
-nationality
-BA/MA/PHD programme ? what studies ?
-what's next ? (future career plans)

2) lifestyle

-place of living (alone[1], sharing, with parents)
-transportation (from where to where + means of transport)
-alimentation (ex= vegetarian diet)
-religion (believer/agnostic/atheist)
-work (part-time job)
-involvement in the community (student associations, voluntary work)
-political orientation

3) climate change

a) do you feel that the Netherlands is an eco-friendly/green city or not ?
b) do you feel that Nijmegen is eco-friendly or not ?
c) do you feel that the campus is eco-friendly or not ?

d) If I say climate change, what does it evoke to you ? / select 3 to 5 words that come to your mind.
e) according to you, why climate change ? what are the causes ?
f) who is responsible ?
g) what is your vision of growth ?

h) the theory of discourse about climate change argues that this phenomena is largely scientifically framed. Would you rather agree or rather disagree with this statement ? Why ?
i) what role does technology play in the context of climate change ? (cause, solution ?)

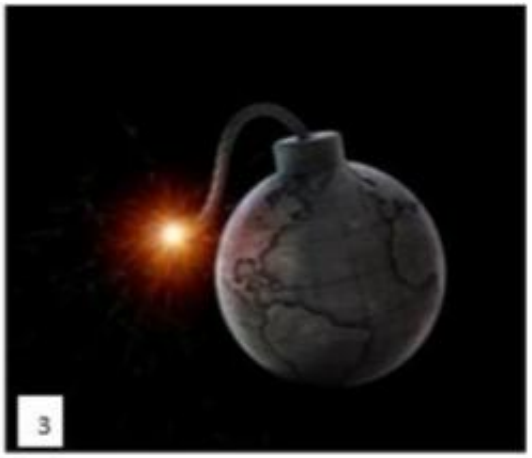
j) what is your vision of Nature ?
k) do you think there's a hierarchy among the natural order ?
l) do you think that we know best, as humans, what's good for Nature ?

[1] Separate student room/student apartment complex/student house

m) what is the role of citizens, governments, businesses, NGOs, the scientific community ?
n) management of climate change : low/moderate/radical action is needed ? (pick one)
o) who should take the lead for climate change action ? why ?
p) who do you think is the more legitimate for climate change governance ?
q) what do you think is the first obstacle to overcome to effectively tackling climate change ? (what do you think is our biggest problem)

r) do you think that your background/studies influence how you perceive climate change/your green consciousness ?
s) among these metaphors/images which ones inspires the most to depict our relationship with Nature/the current global context :

Appendix B: visual data




6


7


8


9
MONSANTO
POISON

10

eco-friendly behaviour → place yourself

1 = very little 2 = a bit 3 =moderate 4 = consequent 5 = a lot

Appendix C: Atlas.ti network of “Nature”