



Linnéuniversitetet
Kalmar Vaxjö

Master's Thesis

A Reader's Response Approach to Lydia Millet's "Zoogoing"



Author: Nahid Al-Tehmazi
Supervisor: Dr. Johan Höglund
Examiner: Per Sivefors
Date: 27/08/2021
Subject: English
Level: Advanced Level, 30 Credits
Course Code: 5EN30E

Abstract

Since its establishment, the study of environmental literature has included a great deal of research which has based its arguments on assumptions that state that climate fiction contains persuasive elements that are impactful on readers. The problem with these assumptions is that they do not offer any empirical proof to demonstrate their arguments. This thesis offers an empirical study of the reception of Lydia Millet's short story "Zoogoing" and examines whether or not the story is able to generate an animal welfare consciousness in the context of climate change within an audience that includes 10 participants from Bahrain. This project was conducted via two surveys on SurveySparrow, one before and the other after the participants had read the story. From the findings, it was revealed that the extinction narrative was able to help the readers conceptualize future ecological possibilities. Although the narrative was able to heighten the participants' consciousness about environmental destruction, their concern for animal conservation remained the same. What was speculated from the analysis in this thesis was that the story had lacked a representation of animals that would focus the participants' gaze on animal extinction.

Keywords

Climate change, climate fiction, empirical ecocriticism, reader-response theory

Thanks

I would like to express my deepest gratitude to Dr. Johan Höglund for all of his help, patience, direction and enthusiasm. I do not think that I could have completed this project without his encouragement and support. I am also grateful for the discussions we had that aided me with a lot of ideas on how to tackle the challenges of forming this thesis. Our meetings have been insightful and have greatly helped me in my academic development.

Table of Contents

1	Introduction	1
2	Theory	17
2.1	<i>Reader's Response Theory and Empirical Ecocriticism</i>	18
2.2	<i>Previous Research Using Empirical Ecocriticism</i>	25
3	Methodology	33
3.1	<i>Survey 1</i>	33
3.2	<i>Survey 2</i>	35
3.3	<i>Limitations of the Study and Selection Criteria</i>	37
3.4	<i>What Type of Natural Landscape Do the Participants Come From?</i>	38
3.5	<i>Climate Change Agendas in the GCC That the Respondents Are Likely to Have Been Exposed to</i>	39
3.6	<i>The Respondents</i>	43
3.7	<i>Local Food Habits</i>	43
3.8	<i>Representation of Nature in Arabic Literature</i>	45
4	Analysis	49
4.1	<i>Survey 1</i>	49
4.2	<i>Survey 2</i>	53
4.3	<i>What Has changed?</i>	57
4.4	<i>A Loss of Purpose?</i>	63
5	Conclusion	66
5.1	<i>Limitations of the Study and Recommendations for Future Work on the Topic</i>	70
6	Works Cited	72
7	Appendices	76
7.1	<i>Appendix A</i>	76
7.2	<i>Appendix B</i>	78

1 Introduction

In the last few years, the emergence of climate change fiction has led to a rapid expansion in the field of ecocriticism. Environmental criticism has brought an awareness, for a number of scholars, to consider how humans relate to the natural environment. The manifestation of climate change, and its urgency as a planetary ecological crisis, is the reason behind this new and recent scholarly attention. Climate fiction is important in regards to social, environmental, cultural and political matters. Part of the purpose of forming climate fiction texts is to stimulate a greater ecologically conscious perspective.

Many scholars have written a great deal on climate fiction as a genre providing an analytical perspective on climate fiction. However, a trend has emerged amongst literary scholars within the field. A number of them have written about the potential influence and political value this type of fiction has on readers, yet very few of them have based their claims on any empirical study or have looked into who their actual readers are. An example of where claims have been made regarding the impact of climate fiction on the reader would be Anna Kaplan's critical analysis of several climate fiction works in her book *Climate Trauma: Foreseeing the Future in Dystopian Film and Fiction*. Although her analysis is very insightful, there are some potential problems with her analysis. Identifying some of the shortcomings of her text is vital for the argument that is being made, in this thesis, regarding the need for further studies on the reception of climate fiction. In the book, Kaplan touches on the prevailing phenomenon of "Pretraumatic Stress Syndrome" (PreTSS) that has been dominating western cultural imagination in the last few decades (xix). Kaplan theorizes pretrauma and explains how it has been a circulating theme in climate fiction. The futurist disaster fantasies and scenarios are represented in all media forms. She explains that "in these scenarios, audiences are invited to identify with future selves in uncertain, dangerous, and ultimately unsustainable worlds. Such identifications result in a pretraumatized population,

living with a sense of an uncertain future and an unreliable natural environment” (xix). She offers a perspective on how pretraumatic elements of various texts, including John Hillcoat’s *The Road* can convey a sense of catastrophic future.

Pretrauma, as a concept, is not something that this essay will expand on. The point of examining Kaplan’s work is to notice how she makes claims about how the audience of climate fiction react to the pretraumatic elements that she talks about in her book. Kaplan, here, discusses possible effects on the audiences (82). She describes effective scenes as those that create “enough emotional power to make viewers jump” (82). However, her claims are not based on any particular empirical study of viewers. This poses a potential problem to her study where no evidence is provided. Very little research has been done on the reception of climate discourse as a means of persuading readers of the urgency of the global climate crisis.

In her article “Border Temporalities, Climate Mobility, and Shakespeare in John Lanchester’s *The Wall*”, Kirsten Sandrock provides an analytical perspective on John Lanchester’s *The Wall*, a novel which centers around the theme of territorial and temporal matters in the context of climate change mobility. Although Sandrock examines a range of narrative techniques found in the story, such as defamiliarization and plot reversal, we are only invited to see the response of a specialist in the field of humanities, in other words, her own analysis of the text (166). Sandrock, does however, provide insights on the text-reader relationship, reader-narrator relationship and reader positioning that relate to the idea of special boundaries in the story. She states:

The reader-narrator relationship in *The Wall* is one of the boundaries that resists easy crossing. Johan Schimanski and Stephen Wolfe’s argument that border narratives frequently have “unpredictable or strange effects” (“Entry Points” 12) has become a staple feature of border aesthetics, and it serves as one framework to interpret the alienation effects of *The Wall* as part of its bordering theme. (166)

The study does take into consideration what has been said about the novel by some readers, but she only mentions a couple of statements made by readers. Like most literary scholars, Sandrock's work is primarily concerned with the representational aspect of narrating the climate problem. This is similar to what Kaplan's analysis offers. Both scholars evaluate the reception of climate discourse based on their assumptions. This leaves a gap in the study of those literary texts that is in need to be filled. One thing that this essay offers is that it fills this gap and contributes to claims that are made about a piece of climate fiction and the impact it has on an audience. How it does this is by providing empirical proof of how readers respond to a piece of climate fiction.

A reason to write this essay is that storytelling is a very important medium used to raise public awareness of environmental collapse and its disastrous impact on life and the planet. Of course, many would assume that fiction is an important component in the development of the human mind (Read and Miller 139). It is generally assumed that reading sharpens the intellect. In an article entitled "The Use of 'Literary Fiction' to Promote Mentalizing Ability," authors Maria Chiara Pino and Monica Mazza state that reading literary fiction can help improve empathetic competences amongst readers (1). But why do people not simply solely rely on non-fiction to gain insight on environmental issues? The first answer to this question is that not everyone is interested in reading scientific articles on the issue. To a large extent, scientific articles offer a great amount of numbers and figures for the readers to comprehend.

A number of researchers at Oregon State University explore the impact of numerical information on the general public and make notes on the limitations of the human mind to register the data (Slovic and Slovic 9). They claim in their book *Numbers and Nerves: Information, Emotion, and Meaning in a World of Data* that the responses of qualitative

information are not likely to stimulate public attitudes to climate change that could lead to action (21). They explain:

We need entire forests as much as we need individual trees, entire species as much as individual birds, intact villages as much as individual refugees fleeing devastation in their homelands and waiting for relief. Numbers are essentially means of describing 'the big picture.' And stories and images have the power to help us understand large, complex problems that we cannot comprehend through quantitative information alone. (21)

Ecofiction can serve as an alternative medium to stimulate concern and spark a public interest in environmental change. Paul and Scott Slovic do mention climate change fiction as one of the alternative forms to alarm people of the severity of the climate crises (123). One may argue that it is not simply numbers that cause people to care about climate destabilization. Paul and Scott Slovic's insights, on the other hand, leads one to question what it is in climate narratives that creates a greater sense of awareness about the environment.

In addition to the use of fiction in raising public awareness about social issues and its ability to help readers to improve empathetic competences, fiction can also bring about a participatory experience in the reader where they feel more engaged (Agosto 22). Storytelling forms an immersive experience that is both enjoyable and entertaining for the recipient (Zhou et al. 374). Storytelling has been a practiced discipline since the beginning of human history (Yilmaz and Cigerci 2). It has long been used to support child development and understanding of the world (Agosto 21). William Cronon explains in *The American Historical Review* how important storytelling is in the discipline of History (3). He says:

But for me, there is one answer that is arguably the most basic of all, and that is, simply: storytelling. We need to remember the roots of our discipline and be sure to keep telling stories that matter as much to our students and to the public as they do to

us. Although the shape and form of our stories will surely change to meet the expectations of this digital age, the human need for storytelling is not likely ever to go away. It is far too basic to the way people make sense of their lives—and among the most important stories they tell are those that seek to understand the past. (5)

As argued, storytelling is not only an important medium used to spark political change, but it is used in many fields of study.

The purpose of this study is to explore how a small number of readers in a particular region respond to a particular short story. This will help determine concrete proof of the effect climate fiction has on the audience. The focus of this study is to know whether or not climate fiction can change reader's attitudes towards climate change and animals. This study would be a contribution to the tradition of Empirical Ecocriticism which is a subfield that exists within Ecocriticism. What is unique about this subfield is that it provides empirical studies on climate narratives in the form of short stories, novels, or movies that have to do with climate issues. What empirical ecocriticism does is provide an insight on how audiences may be influenced by those forms of fiction.

In my thesis, I provide a study of how readers respond to Lydia Millet's "Zoogoing". This story is included in the short story collection *I'm with the Bears: Short Stories from a Damaged Planet* (2011) and was extracted from Lydia Millet's novel *How the Dead Dream* (2009). "Zoogoing" is an extinction narrative that features a man's interaction with zoo animals. What is meant here by extinction narratives are stories that are meant to emphasize the idea of animal extinction and the environmental dangers they pose on planet earth. The awaited mass extinction of animals is the central theme of the story and the main character's concern and care for the animals is significant. Referred to as T in the story, the protagonist reflects upon the emotional realities experienced by humans and animals as a result of the ecological crisis. I examine the responses of this story through conducting a qualitative

survey of 10 readers with a questionnaire (See appendix A and B). SurveySparrow is the main online survey research tool used for this study. To respond to the survey, the participants engaged in a conversation with a chatbot when answering the questions. All 10 participants taking part in the study are high school students residing in Bahrain. The students are currently in their last year of high school and preparing to take the IELTS exam.

There are very few examples of empirical ecocritical studies and what makes this study an original contribution is the fact that it offers to examine respondents from the Middle East, particularly in the Gulf Cooperation Council region (GCC). Although many scholars have looked into the readers' responses of western audiences, no empirical study has been done on readers residing in the GCC. It is very important to move beyond the western reader mainly because many readers around the world read English literary texts produced in the west. Readers in the GCC represent a different tradition and different perspective that is not Eurocentric. Whether those literary texts inspire change or not, is important when considering its impact on a global scale.

As mentioned before, many scholars have made claims about readers' responses, but have not provided any empirical study as evidence to support their argument. Kaplan and Sandrock are both examples of this. What is being examined here is how imagined scenarios depicted in stories can influence people's opinions about political or environmental matters. To what extent are readers receptive towards those presumed "affective scenes" and literary devices? What Kaplan meant by "affective scenes" in her analysis were scenes that are assumed to have an effect on the audience and influence their perception about something. In this study, what the participants refer to as an "affective scene" or expressions they use that reveal a sense of impact will be identified. The surveys in this study reveals what it is about the story that can affect the reader.

If I am to make claims about readers' responses to climate fiction, then I need to address the issue of environmental agency by approaching this literary genre with reader's response theory in mind. Environmental agency here refers to public attitudes and behavior that promote action towards ecological sustainability (Biesta and Tedder 135). By engaging in Empirical Ecocriticism, we could better understand how climate fiction helps readers understand climate change and may also help us identify what aspect of storytelling is influential in making change.

Before examining "Zoogoing" from the point of view of the participants, it was important to explore how the notions of extinction, climate change and the animals were represented in the story. Getting an insight as to how the main character of the story relates to the animals also can provide an idea of how the story can make the participants relate to the idea of animal conservation. Although there is very little plot to the story of "Zoogoing," much of the events in the narrative revolve around the zoo animals and most of the action in the story happens at the Zoo.

The opening lines of "Zoogoing" reveal the setting and place of the zoo, in a desert. "The zoo was on the edge of a wide desert valley, with a view of cactus-dotted hills above and, in the flats spread out beneath, flocks of small white houses" (21). It is said that the man went there to "fill an empty afternoon" (21). The man referred to as T in the story is the protagonist and is seen looking at a Zoo brochure in his hotel room "with a picture of a wolf" (21). One might wonder why a wolf would be placed in a desert zoo. This may imply that there is some sort of displacement of animals. Perhaps the displacement of the wolf is meant to coincide with the idea of the displacement of migration animals.

In the Zoo, the protagonist sees hummingbirds, beavers, otters, Mexican parrots, bighorn sheep, ocelots, bobcats, a Mexican gray wolf, bears and American kestrel amongst other animals. What can be said about his relationship to the animals is that T appears to

mimic them. In the beginning of the story T sees a bear falling asleep, he then feels like “dozing off himself” (21). T feels a sense of protection and responsibility towards the bear. “T. felt heat filling his face” when a man was spotted throwing paper on the bear to catch its attention for a photo (21). T is outraged and warns the man not to do it again. In anger, he stands up for the animal and tells the family man off for throwing trash at the bear. He then threatens to break the man’s camera and to punch him in the face.

T then returns to his hotel room in Arizona and spends his time thinking about all the different animals which have gotten extinct in the past few decades. He then appears at a social gathering where he shows no interest for the woman who seduces him there. His disinterest in women can arguably be seen as a lack of interest in reproducing. This idea resonates with the slogan Donna Haraway uses in her book *Staying with the trouble: making kin in the Chthulucene*, “Make Kin, not Babies” (6). The slogan she uses is meant to raise questions about human responsibility in the climate crises matter and a need to control population growth (6). She explains,

My purpose is to make “kin” mean something other/more than entities tied by ancestry or genealogy. The gently defamiliarizing move might seem for a while to be just a mistake, but then (with luck) appear as correct all along. Kin making is making persons, not necessarily as individuals or as humans. I was moved in college by Shakespeare’s punning between kin and kind —the kindest were not necessarily kin as family; making kin and making kind (as category, care, relatives without ties by birth, lateral relatives, lots of other echoes) stretch the imagination and can change the story. (102)

It is possible that the character of T felt a great sense of responsibility towards humans and animals to an extent that made him opposed to the idea of reproducing in a trouble world where extinction is inevitably meant to occur. While T is uninterested in making babies, he

tries to make kin with the zoo animals. In the story, T then goes on to make a few more visits to the zoo. As his obsession with extinction grows, T starts breaking into the zoo at later times of the day when the zoo is closed. There, he tries to connect with the zoo animals.

Both the physical state of T and the animals seem to be in poor condition. T's fingers are bruised with purple lines; he injures his leg while trying to break into the zoo. The animals are described by him as "rare", "lonely", "aging" and "frail." Many of them are found to have mangy fur. The protagonist reveals a great deal about his concern for endangered animals and tries to reach out to the animals. Many questions can be raised about how the character of T relates to the zoo animals in the story. On several occasions, T is rejected by an animal and feels pushed away when he tries to pet one. The animal's rejection here may entail a dissatisfaction that it may be feeling towards T in the story. Not only for him being human, but also for being part of a species that is actively responsible for the climate crisis and for their extinction. Whether T sees the animals as species equal to humanity in the story is arguable. It is possible that T sees himself as superior to other species. That very possible notion can stimulate questions for the reader. This scene can also be seen as to convey his unconscious desire to tame the animals, his need to comfort the poor caged animals, a desire to give them one last touch before they go extinct, or even a grieving attempt to feel a sense of connection before they cease to exist. Another way this scene can be interpreted is viewing his repeated visits to the zoo as a way to gain some sort of partnership and companionship.

To touch an animal is a notion Donna Haraway in her book *When Species Meet*, explores at length. She states, "Two questions guide this book: (1) Whom and what do I touch when I touch my dog? and (2) How is 'becoming with' a practice of becoming worldly?" (1). Haraway's book provides insights on the human animal interaction. She explores the domestication of animals and how people with pets relate to them. She also

touches on the philosophical and cultural perspective on the instrumental relationship between humans and their lab animals (73). “The degree of freedom” is a useful term in Haraway’s book that I can consider in relation to the animal representations in Millet’s “Zoogoing” (73). This term highlights the idea of freedom that animals have, especially when in captive. Although they may be fed in a zoo, they are stripped of their basic animal instincts and life purpose, such as hunting for other animals. In the story, T reflects upon whether or not the animals may be aware of what level of freedom they may have. In doing so, he describes the difference between living life in the wilderness and living it in a caged zoo drawing emphasis on the amount of waiting the zoo animals have to do when waiting for their next meal.

Haraway draws on ideas such as species partnership, animal cooperation and human animal hierarchies. Those relationships are emphasized in the picture depiction of the Vitruvian Dog Da Vinci Dog (Haraway 8). Like the Vitruvian Man, the image depicts a dog in what looks like a double position with both its arms and legs spread out on its sides in the middle of a square and a circle. It can be argued that replacing the man with a dog in this image entails that animals take the same position as humans do, in other words making them equal to humans. This idea can be related to the way T views the animals in the story, as equal species, placing both himself and the animals in the center. On another note, Michelangelo’s *Creazione di Adamo* is a painting that can also be related to the idea of T reaching out to touch the animals in the story and the loss of life that is associated with it. This painting captures the image of God’s hand almost touching Adam’s which is meant to portray God’s first attempt to spark life into the man that would be the first to exist (Meshberger and Rich 1).

The insights Haraway outlines in her study can serve as possible ways in which the participants in my study can perceive and relate to animals. They may see the animals at the

same hierarchal position as T or be immersed in the idea of the loss of life for all species in the story. This all depends on how they relate to animals themselves and if this story can change their perspectives about animals as well. Here, two questions are asked: how do the participants understand the T/zoo animal encounter and then second, what emotions are generated in the participants when reflecting on those scenes. Whether the readers see “Zoogoing” as a fable or not or if they manage to see the moral of the story will be determined from the answers they give in the questionnaire.

Before analyzing the participants’ responses, it is helpful to reflect upon how the story might be interpreted by them. The fact that the Zoo is in a desert environment makes the story more relatable to the target audience. Bahraini students are very familiar with what a desert zoo might look like. There are various possible ways that the readers might interpret the protagonist’s actions towards the animals. They might see him as a psychologically disturbed single man who is trying to fill in a void in his life by reaching out to the animals and by giving himself a sense of purpose. They may perceive the coming of extinction as a warning for the way animals are generally treated as climate damage is actively destroying wildlife security. Another impression that a reader might have is viewing T as a man who regards animals as “sisters” or as a man who domesticates animals as a means to serve human beings. One thing that the questionnaire can reveal is whether or not the readers will have an opinion on human/ animal hierarchy.

An important question that may be raised when analyzing the story is how the way humans relate to animals should be defined. In the story, the connection between the character of T and the animals is very apparent in the way that the man strives to reach the animals and observe them. However there still remains somewhat of a distance between the two. Whether or not this is due to the effects of climate change on both species or whether that is a problem concerning the main character himself and a lack of understanding that he

may have towards the animals is a topic that can be interpreted in different ways by the readers in this study.

The distance between T and the animals may have an effect on the way the readers view the animals. As readers, we are not really invited to see what the individual species were actually like. Most of the animals are described in groups. Some are described individually, but in the same manner that every other animal was described in. For example, several animals were depicted as distant species that reject human connection. The readers are not invited to get to know the animals. At some point, towards the end of the story, the character of T would notice that some had begun to come a bit closer to him, “while he slept, as far as he knew, the animals did not mean to approach him. But when he woke up they were sometimes near him by happenstance” (29). There appears to be a lack of understanding in the following statement: “And what about the endless differences of the animals, their strange bodies? Many legs, stripes, a fiery orangeness; curved teeth or tentacles, wings or scales or sky-blue eggs. instead of looking at the wolf as an animal he never knew and never could, as with the sacred and the divine, he had fallen into the trap. He had wanted it to lick his hand and lope along beside him” (25). T’s intentions in this scene can also be perceived as intentions to domesticate the animal rather than have empathy towards them. One argument to make, in this case, is if the main character was not able to fully sympathize with the animals, how might the reader feel that way towards them. Another example can be found in one of the most important scenes of the story where the man and animal interact with one another. In this scene T tries to approach a wolf to initiate a connection between them. Although the reader learns about what happens between the two, no description of the wolf is actually provided. See the following passage from Millet’s story:

He got up silently and picked his way closer, still without the flashlight on, his eyes on the ground while he threaded his way between bushes. Closer and closer till he

pointed the flashlight toward the ground in front of the wolf's hunched shape and touched the switch with his thumb. A quick yellow flicker of eyes and then the wolf moved fluidly, fleeing along the fence. It went away from him, into a corner where it remained. He would not get closer. The wolf would not allow it. (24)

A further example would be the description of the Sumatran rhinoceros. Again, the reader is invited to see how the animal is acting in that particular scene, but nothing really about the nature, or in other words, the personality of the animal. Knowing an animal's personality can play a vital role in forming sympathy for the animal from its fellow human species.

Dicerorhinus sumatrensis It was the only one in captivity in the United States and it was a dinosaur; its species had lived for fifteen million years and there were only a few hundred left. A female. She hauled herself up as he stood there, hauled herself up and walked a few steps away. She was nosing hay or straw, whatever dry grass littered the floor of her room. She gave an impression of oblong brownness. The Sumatran rhinoceros, he had read, liked mud wallows. Here there was nothing but floor. (27)

As one might observe, no personification is involved in the description. The narrator, here, goes on to describe some of the animal's action in the following lines: "The Sumatran rhinoceros reportedly had a song, difficult for the human ear to follow; its song had been mapped and similarities had been found between this song and the song of the humpback whale. It was not singing now" (27). The only scene where the reader is told about an animal's feelings is in the following lines:

After a while the rhinoceros sighed. It was a familiar sound despite the fact that they were strangers. He knew the need for the sigh, the feel of its passage; a sigh was not a thought but substituted for one, a sign of grief or affection, of putting down something

heavy that was carried too long. In the wake of the sigh he wondered exactly how lonely she was, in this minute that held the two of them. Maybe she saw beyond herself, the future after she had disappeared; maybe she had an instinct for the meaning of boundaries and closed doors, of the conditions of her captivity or the terminus of her line, hers and her ancestors'. Maybe she had no idea. (27)

The image that the narrator drew of the animals was portrayed through the eyes and perspective of the character T. Distance and loneliness were amongst the major themes in the story. The distance between the two species might have been the reason for the existing loneliness amongst the species. One might view the story as more about T himself and the way he viewed the animals and that it was not really about the extinction of animals, but rather T's consistent obsession with extinction and the state it led him to. Additionally, readers may also be affected by T's boredom from watching the very motionless life of the caged animals. See the following passage from the story:

So he waited for each animal to show itself, and over time he grew tired, then bored; he was amazed at the depth and reach of his boredom, the way minutes and hours wore on uneventfully. For the animals too the greater part of captivity was waiting: when their food was delivered the last animals fed, slept and briefly forgot, he believed, the urgency of hunger. Then they awoke and the waiting started again. (9)

In this passage, T reflects upon what might be the difference between life in the wilderness and life in captivity for the animals. Life in captivity is depicted as repetitive, weary, purposeless, and boring in T's understanding. T also reflects that, in captivity, the animals' purposeless lives were mostly consumed by time spent waiting. In the wilderness, on the other hand, the purpose of life was filled with the notion of struggling, challenge and trying to survive that must probably illuminate the waiting time for the animals as T imagined. If the

zoo life relied on waiting, then life in the wilderness must have relied on pausing, he believed.

The mastery of the story lies within its ability to form a sense of distance between the reader and all animal species. In the story, not only did the character of T feel the distance, but he also reflects upon the hierarchy and separated space between other fellow human beings and animal species. In the following lines, T is shown reflecting upon the way humans regard animals:

He took two aspirins and showered. In his socks and his shirt, standing in front of the in-room coffeemaker, he thought of the old wolf again. Animals were self-contained and people seemed to hold this against them—possibly because most of them had come to believe that animals should be like servants or children. Either they should work for men, suffer under a burden, or they should entertain them. He had strained against the wolf's aloofness himself, resenting the wolf for its insistence on distance. He had felt it almost as an insult, and inwardly he retaliated. (24)

The idea of distance can be problematic in the sense that it might not be the most effective way to form a sense of concern for animal welfare amongst readers. The participants, when reading the story, may be affected by the isolation of T, the withdrawal of the animals and the distant vibes coming from all living species in the story. This existing detachment is also symbolic of the explicit connection between peoples' actions and participation in climate damage and its expected disasters.

One thing that will come into mind when analyzing the responses of the participants is whether or not their perceptions of the story will match the intentions of the author. After all, every author writes a narrative with a purpose, whether that is to inform the readers of an existing reality or social structure, to provide historical accounts, to entertain them or to

persuade the readers of a recurring problem that needs to be solved. In his article “Authorial Intentions in Text Understanding” Raymond W. Gibbs suggests that the readers’ understanding of a literary text heavily depends on how the author’s intentions are communicated to the reader (73). He states that “Although authorial intentions do not secure text meaning, people ordinarily seek both real and hypothetical authors’ intentions as part of the meaning inferences drawn when reading” (73). But what can be said about the author’s purpose and intentions of writing this short story? As previously stated, this story appeared in the 2011 short story collection *I'm with the Bears: Short Stories from a Damaged Planet*. One might guess from reading “Zoogoing” that the author intended to draw attention to current animal extinction problems and climate change. It is no surprise that she wrote a story with the theme of environmental catastrophe given that she holds a degree in Environmental Policy and has worked for a nonprofit organization named The Center for Biological Diversity (Millet). Lydia Millet has also shown an interest for environmental justice in some of her other fictional work that explore the theme of climate change and the human animal relationship, such as her novels *A Children’s Bible* (2020) and *How the Dead Dream* (2009), *Love in Infant Monkeys* (2009), and the 2013 novel *Magnificence*. Given this information, it is possible to speculate that the intentions of the author had more to do with advocating climate justice and animal welfare rather than merely entertaining the audience.

Being aware of the purpose of the text can play a role in the reader’s text comprehension. If the participants of the study are ignorant of Millet’s personal and professional background, they may pick up that they are supposed to consider the way animal welfare and climate change are addressed in the story mainly because they were asked so many questions regarding the issue in the surveys. Here they will be using their assumptions about the author’s intentions of writing the short story. None the less, all readers of the story

will be aware that the material was created for a specific purpose and inferences about Millet's purpose will be part of their text processing.

2 Theory

In this section of the thesis, I draw attention to the insights of Stanley Fish's work on Reader-Response theory. The reason for doing this is because Empirical Ecocriticism draws upon ideas and concepts used in reader-response theory. Both theories rely on one another as the basis of forming a reader response oriented study. In this study, Empirical Ecocriticism proved to be a more suitable theory to address the participants' responses because of its contextual literary field and because forming empirical data on what the participants had to say about the story would serve as concrete proof as to what the impact of reading a piece of climate fiction had on them. In this study, I utilize some concepts explored by Fish in reader-response theory in the analysis of this study. Fish's contributions are the root behind the development of Empirical Ecocriticism. Fish's work is an early establishment of what later developed into Empirical Literary Studies (ELS). The early foundations of ELS were established in Germany by the International Society for the Empirical Study of Literature in 1987 (Alber and Trasen 5). Matthew Schneider-Mayerson notes on the connection between reader-response theory and empirical ecocriticism in his essay "The Influence of Climate Fiction: An Empirical Survey of Readers." He explains that,

Though reader-response theory has fallen out of favor—in some guides to literary theory, the chapter on reader response theory has been replaced with a chapter on ecocriticism—this interest in readers has been picked up by scholars in gender studies, queer studies, translation studies, historicism, and cognitive literary studies. While most well-known reader-response critics did not conduct empirical research, their attention to readership has led to the current interest in empirical experiments on the reception of literature and artwork, often focused on cognition, affect, and empathy, published primarily in journals such as *Scientific Study of Literature* and

Empirical Studies of the Arts. Similarly, my interest here is not in the meaning of climate fiction, but the work that these texts accomplish in the world. (475)

Here, Mayerson makes clear that the work reader-response critics do on text analysis is what sparked an interest in empirical studies of literary text reception, including ecofiction.

2.1 Reader's Response Theory and Empirical Ecocriticism

Previous contributions to reader's response theory can provide a great deal of knowledge on how particular narrative techniques can create different reactions from readers in the context of climate change. If ecofiction can prompt a new ecological value system within communities, it is important that scholars understand how this occurs.

Reader-response theory particularly arose from Norman Holland, Wolfgang Iser and Stanley Fish's 1970s work on reader-response. Their intentions behind developing this theoretical branch were to complete the process of interpretation of text by taking into account all four agents of a literary work: the author, the text, the social circumstances and the reader's experience. Considering those four factors, they believed, could determine how the text was meant to be read (Newton 220).

Stanley Fish, in his book *Is there a Text in this Class?* provides a universal conceptual understanding that expresses the reading approach or reading style. He categorizes all reading experiences in a universal readers' style (7). He positions the reading process on a universal scale, claiming that the majority of readers actually read the same way within a certain interpretive community (7). His hypothesis does not fully reflect upon the fact that each reader has his or her own distinctive style of reading. He addresses common assumptions about reading and literary interpretation. The first assumption is viewing the reader and the text as two separate entities that are independent of one another (1). The second assumption relates to the availability of the intentions of the author in the text (2). The third is that the responses of each reader was different (2). In other words, the responses were inconsistent

and came in the form of a variety. My intentions of examining his work critically does not include arguing against his idea of the uniform reader. Nor do I think it is useful to criticize his point of view on this. After all, he only applies this notion to native English readers. In the case of my study, I focus on non-native English language speakers. Therefore, it would not make sense to apply this theory of “the uniform” to speakers whose native language is another. It is, on the other hand, a good question to raise. Can we say that non-native speakers acquire the same uniform way of engaging with a text? In this case, the answer would be no because it all depends on their level of proficiency in the language. Readers with different levels of English proficiency have different ways of engaging with the text because of their range of English vocabulary which affects the way they understand the text and their ability to relate to the different situations and characters portrayed in the narratives.

There is one very important notion that Fish challenges in his book and that is the false assumption that meaning in literary text are usually actualized by a body of scholars (2). What he meant by this is that literary scholars determine how an actual text is meant to be perceived. He states that “communal decisions” made by communities of readers determine what is considered literary text (14). This is particularly the case when we look at the claims made by scholars, such as Kaplan and Sandrock who assume that climate fiction is influential in making change. However, their arguments are not based on empirical proof of this. This tradition of scholarly contribution can be considered to be the ones who make those “communal decisions” about the impact of environmental narratives. After all, their speculations are based on the assumption that climate fiction should be interpreted in a certain way. This is also the case of many teachers who present a supposed way of what students are meant to grasp from a text, without taking into consideration the students’ contextual status, cultural background, environment and understanding of the world. For the

most part, those elements shape the way the participants will respond or relate to the text.

Fish states,

In short, I substituted the structure of the reader's experience for the formal structures of the text on the grounds that while the latter were the more visible, they acquired significance only in the context of the former. This general position had many consequences. First of all, the activities of the reader were given a prominence and importance they did not have before: if meaning is embedded in the text, the reader's responsibilities are limited to the job of getting out; but if meaning develops, and if it develops in a dynamic relationship with the reader's expectations, projections, conclusions, judgements, and assumptions, these activities (the things the reader does) are not merely instrumental, or mechanical, but essential, and the act of description must both begin and end with them. (2)

What can be concluded from this statement is that context is an important aspect that aids the reader's instrumental activities involved in the action of reading. This is why the participant's context is taken into consideration in this study and how this is done is by evaluating to what extent the participants' community is engaged in environmentalism, their current awareness and knowledge about their environment and what climate literature they have been exposed to at school.

Fish disagrees with the notion that meaning is extracted from the text alone.

Interpretation, in this case, is a response that follows the initial immediate experience of reading. While reading, the person's understanding of language is put into use and plays a vital role in the processing of the information. The fact that a lot of literature is not written in the language we use in our daily life is another reason why the reader has two stages involved in the reading process. So, in order to comprehend and get the full scope of the messages conveyed in the text, the reader has to think of the content in a different language form.

Reading requires a subjectivity in understanding and distinguishing between literary language and everyday speech (Fish 10). The literary language is the type of language that can be found in literary writing. Literary language may include a nonstandard dialect of the language or a standardized variety of it. This form of language also highlights the difference between spoken and written language.

The difference between literary and everyday speech may vary at a more significant rate in different languages. For example, consider the native language of the participants of this study, which is Arabic. In this language, the difference between the two language forms, literary and non-literary is greater than it is in English. Literature in Arabic is usually written in standard Arabic. Modern Standard Arabic (MSA) is generally used in formal speech across Arabic speaking countries. This formal variety of the language is used in business transactions, formal documents, Quranic texts, school text books and all forms of media print outs (Albirini 448). MSA is used to make communication between Arabic speaking populations understandable and less complex. Dialects of Arabic speaking countries, on the other hand, differ significantly (Albirini 448). Although this may not be the case in English literature anymore, it is important to keep in mind the vast gap between spoken and written language in Arabic. This gap often poses challenges for students with Arabic heritage when in an Arabic language classroom (Albirini 448). The fact that there is a great difference between the two in the participants' native language could affect the way they perceive English texts. The fact that there is an existing gap between the students and their Arabic literary text books in school could affect their confidence in tackling literary texts written in English. One might argue that understanding of a text is what leads to a response. However, what is important in this study is not how much they understand from the short story or if they understand it in a specific way, but rather how they respond to it. The aim of this study is to see whether or not this particular story will be influential to them or not.

Fish goes on to talk about the relationship between the text and the reader's interpretation of the text emphasizing that it is interpretive communities that form specific and commonly practiced "interpretative strategies" (14). The problem he points out is that interpretive communities tend to be the ones who take on the responsibility of producing meaning, a role that should be left for the text or the reader to determine. Those communities often claim authority over "meaning" and are the ones who produce a great deal of writings. What is important to keep in mind here, is that those same interpretive communities exist in Arabic Literary Studies as well. Fish elaborates that "there is no single way of reading that is correct or natural, only ways of reading that are extensions of community perspective" (16).

It would be worthwhile to hypothesize to what extent the participants in my study actually follow particular formulated reading strategies. Given that the group of participants in this study are not very familiar with either the author or her literary work, this leaves space for them to analyze her text independently without being influenced by other analysis done on Millet's work. There is not much analysis done on her short story available for them to see. In this sense, there are no interpretive communities available to steer their understanding of the text. However, since there is a presence of interpretive communities in Arabic literary studies, it is possible that the participants may ask "what does this text mean?" They may feel a sense that they need to rely on some sort of interpretation of the text for them to give their own interpretation of it. To put it simply, their familiarity with reading styles in Arabic literature and the existence of interpretive communities may lower their level of confidence in providing their opinions about the story, thus providing less input when responding to the second questionnaire in this study. One may conclude that it all boils down to what the reader chooses to pay attention to. Only by experimenting with this and gaining full proof of what readers pay attention to can we investigate what a shared experience is, in this case. This is something that will be investigated in this particular study. Commonalities between

the participants' survey answers will be paid attention to and noted down in the analysis section of this thesis.

For this very reason, approaching the study from an empirical ecocriticism angle proves to be more suitable as a way to generalize common responses. As stated before, empirical ecocriticism is a very new branch in ecocriticism that designates empirical research to illustrate how audiences may be influenced by being exposed to climate fiction. This branch of study can also be used to argue against false claims and ambiguity about what literary texts accomplish. By engaging in empirical ecocriticism, a scholar can draw analysis from conducting qualitative input of readers to allow scholars to make better claims about their implications and have solid proof to back their assumptions about how stories affect the audience. In their article "Empirical Ecocriticism: Environmental Texts and Empirical Methods" Mayerson et al. elaborate of this field of study stating that:

Recently, cognitive narratologists and other ecocritics have drawn on social scientific research to hypothesize about the influence of literature and other media on its readers (e.g., Easterlin; James; Weik von Mossner). Empirical ecocriticism carries this interdisciplinarity to its logical conclusion by conducting original empirical research. In order to learn, for example, whether climate fiction influences the attitudes and behaviors of its readers (Schneider-Mayerson, "The Influence of Climate Fiction"), or whether narrative empathy can make readers care about the plight of nonhuman species (Małecki et al., "Feeling for Textual Animals"), an empirical ecocritic might choose to conduct interviews, a focus group study, a survey, or a controlled experiment. These methods are not perfect—no method is—but they are the most reliable methods available to empirically examine the impact of any stimulus, and they help us avoid the common errors described above. (328)

According to John Charles Ryan in his article "Ecocriticism", this branch of ecocriticism emerged in 2019 (110). W.P. Małecki and Jarosław Woźniak, in their essay "Ecocriticism in Poland: Then and Now", trace the first works featuring Empirical Ecocriticism to a conference that was held in 2016 at the University of Wrocław, in Poland under the name "Go East! Ecocriticism in Central and Eastern Europe" (Małecki and Woźniak 38). They state that:

While empirical ecocriticism is currently an international phenomenon, embracing countries as different as the USA, Singapore, Austria, Australia, and Croatia (see, e.g., Schneider-Mayerson; Weik von Mossner), some of its roots can indeed be traced to Poland, in particular to the experimental studies on the psychological influence of animal narratives conducted at the University of Wrocław by a team of specialists in literary studies, biological anthropology, and social psychology. (38)

Key scholars of Empirical Ecocriticism, Wojciech Małecki, Matthew Schneider-Mayerson, and Alexa Weik von Mossner created an online database of empirical studies on climate fiction audiences ("About"). Ryan states that "[t]heir approach centers on the testing of hitherto unsubstantiated claims integral to ecocriticism and the environmental humanities, particularly the narrative engendering of ecosocial values such as conservation ethics and empathic regard for more-than human life" (110). Ryan here explains that those scholars take on an approach where they test claims that are made in ecocriticism about narratives that revolve around ecological social values, conservation and regard for human as well as non-human species and the impact of those narratives.

In a 2010 essay, Gregory Garrard writes about the need for a more "empirical approach" in the field of ecocritical pedagogy, which he claimed to be "theoretically underdeveloped" partly due to the lack of empirical research (Garrard 233). Empirical

Ecocriticism supplies scholars with insights about environmental narratives and what it can do for people. It builds the bridge between eco-fiction writer, the content and audience. What empirical ecocritical researchers do is supplement their study with methods and resources made available in environmental psychology. They focus on narrative effect and strive to identify what can be regarded as “empirical data” according to different empirical theories (Ryan 110). At a roundtable in 2019 at the Association for the Study of Literature and Environment (ASLE) conference, empirical ecocriticism gained the attention of many research scholars and generated debates during the event (Ryan 110).

In addition, empirical studies of climate narratives expand beyond novels, films and art. An assessment on how climate change poetry performs its role in forming climate urgency is also a part of the empirical ecocritical potential (Ryan 111). In this thesis, Empirical Ecocriticism is the primary theory used to understand the reception of an ecocritical narrative.

2.2 Previous Research using Empirical Ecocriticism

In this section, some examples of previous research in Empirical Ecocriticism are mentioned and explained. The purpose of mentioning this previous research is to relate it to the circumstances of the participants in this study. Previous work that has already been done can help determine what questions can be asked in the case of the questionnaire in this study.

In his essay “The Influence of Climate Fiction: An Empirical Survey of Readers”, Matthew Schneider-Mayerson presents the results of a qualitative survey consisting of 161 American participants who respond to their experience of reading one of 19 different texts (473). From his study, Schneider- Mayerson finds that young readers of climate fiction tend to be more concerned about global warming than nonreaders of the genre (473). He also reveals that the responses tell us that climate fiction tends to bring about extremely negative emotions for the readers, which he believes to be counterproductive (473). He states,

The affective responses of many readers suggest that most works of climate fiction are leading readers to associate climate change with intensely negative emotions, which could prove counterproductive to efforts at environmental engagement or persuasion (473).

Far into the article, he then provides some examples of what respondents had said that constituted this emerging pessimism and counter productivity.

This tendency for the disaster frame to elicit feelings of helplessness was evident in some readers' responses. The liberal technician from Florida said that reading *Ultimatum* "makes me fearful for the future" and pessimistic. Thinking in terms of: "Well, if that is inevitably going to happen, then maybe we're the type of species that deserves it" A manager from New York noted that *Odds Against Tomorrow*, which describes the destruction of parts of New York City by a dramatic flood, was particularly powerful since she "lived through 9/11 and Superstorm Sandy." As a result it was a "compelling read," but it "made me feel that climate change is not only real but such a big problem, we may not be able to solve it." This lesson is counterintuitive: the psychological tendency to avoid stories that deliver negative emotions means that well-intentioned authors who vividly depict the catastrophic consequences of climate change may actually be hindering their goal of heightening environmental consciousness. (490)

Mayerson uses Amazon's Mechanical Turk (AMT)¹ to gather information about the readers' reactions to various works of climate fiction despite there being some negative opinion about AMT as an empirical tool amongst social scientists mainly for its limitations in generalizing

¹ Amazon's Mechanical Turk (AMT) is an online platform where businesses can conduct crowdsourcing research in the form of surveys in order to draw analysis on the marketplace. This is a great way to gather information about readers responses and reviews on particular books sold on Amazon. However, in the case of this study, it would be too difficult, even impossible to keep track of climate fiction sold by Amazon in the GCC region.

results due to its lack of diversity in users (Mayerson 477). To answer the survey, all participants were recruited through AMT before they could take part in the study. The selection of texts included the most popular, praised, and cited environmental fiction published during the past two decades (477). Mayerson's study may appear to be quite general, in the sense that he allows the participants to choose from 19 different texts, but it is also limited in terms of audience. Mayerson only includes American readers in his investigation. One thing that is not acknowledged in this study, is that ecofiction is widely available online and accessible to a much broader audience at an international scale. It is important to acknowledge that this type of market is not restricted to English native speakers in The United States and a form of cross cultural communication is involved when a foreign audience purchase a book published in the U.S. Various books that are published in the U.S. are sold on amazon.com which are available to consumers on an international basis.

In another study, Miranda Iossifidis examines the insights of individual participants from California who are part of an online reading group. Her reflections are elaborated in her article "Reading *Parable of the Sower* Online in a Pandemic: Collectively Imagining Different Futures with Octavia E. Butler's Speculative Fiction." In this study, the group discussions occur via Zoom, notes are shared on Google Docs, and some communication is carried out via Whatsapp (156). Her analysis came from closely observing interactions and conversations that occur when the group is discussing excerpts from Octavia E. Butler's *Parable of the Sower* (156). The purpose of the study is to examine the relationship between speculative climate fiction and political change in the context of the current COVID pandemic emergency. In the article, Iossifidis claims that the narrative reinforces a sense of hopefulness for the readers and also views the group discussions in the light of collective sense-making and "receptive generosity" that is brought about by the group members who share their own interpretations of the story with one another (158). Her methodology

approaches reader's response at another level. In comparison to Mayerson's study, where the reading process is the main focus, Iossifidis apparently is analyzing the group members' exchange of interpretation. The exchange happens in the form of discussion, however there is a risk of losing insights on how each individual member has responded to the text. The unlikelihood that all members of the group get a fair chance to express themselves causes limitations to the study. Although my study does not evaluate the discussions that take place after the respondents have read the text, a question about whether or not the participants have discussed the story with other readers is included in the questionnaire.

Of course, novels and films are not the only media forms that emphasize ecological urgency. Art has long played a strong role in influencing individual environmental attitudes. Two experts in the field of psychology, Laura Sommer and Christian Klockner, extend empirical methodology to audience reception and examine how people respond to activist art. For their study, the scholars engage with approximately nine hundred participants that fill in a questionnaire. In their article "Does Activist Art Have the Capacity to Raise Awareness in Audiences?—A Study on Climate Change Art at the ArtCOP21 Event in Paris" they mention that the spectators were asked to engage with four clusters of art works "The Comforting Utopia," "The Challenging Dystopia," "The Mediocre Mythology," and "The Awesome Solution" (60). The results of the questionnaires showed that the "Awesome Solution" received the most emotional responses (60). These pieces of art seemed to represent the most optimistic view on how to deal with weather destabilization. Their findings resonate with what Mayerson concludes from his experiment in "The Influence of Climate Fiction and Empirical Survey of Readers." As mentioned earlier, he states that dystopian fiction, for the most part, proved to be counterproductive to readers. This was because readers showed to have associated dystopian climate fiction with negative emotions. He elaborates,

In place of doom, psychologists suggest that climate communications be framed positively. Positive frames might include “insurance against risk,” “health and well-being,” “preparedness and resilience,” “values and a common cause,” and opportunities for innovation and job growth.” These are not the dominant themes in the nascent canon of American climate fiction, though a number of these works—especially *Flight Behavior* and *Back to the Garden*—were interpreted by readers as containing messages related to “preparedness and resilience.” (490)

This comparison leads to a question, which is whether or not my chosen primary text can be considered as dystopian fiction and how this might impact the responses of readers. Although “Zoogoing” may not seem like the happiest story to a reader, the environmental reality in it is not exaggerated. The story in a sense reflects reality as it is. In this sense, it is not a dystopia and on the other hand, it may or may not be motivating for the participants when it comes to their engagement in environmental activism.

The methodology Małecki et al. use in their study of reader’s response to animal representation in stories is well thought out. In their book *Human Minds and Animal Stories: How Narratives Make Us Care About Other Species*, Małecki et al. investigate how stories raise people’s consciousness about animals and why it is important to study the representation of animals in ecocritical fiction. Cruelty to animals plays a vital role in intensifying the climate crisis issue and it pushes the animal and plant life cycle off balance (Cassuto 13). According to David Cassuto in his article “The CAFO Hothouse: Climate Change, Industrial Agriculture and the Law”, a 2010 figure showed that between 18 to 51% of global carbon emissions are released into the air due to animal agriculture activities (13). He states, “The mathematics of the solution are equally simple. Decreasing animal agriculture will lead to lower carbon emissions. Lower emissions will lessen global warming. Sadly, implementing the solution is less straightforward” (13). Not only does global warming

represent a threat to human life, but it also has devastating effects on animal life. In his article “Greening Animal Defense? Examining Whether Appealing to Climate Change and the Environment Is an Effective Advocacy Strategy to Reduce Oppression of Nonhumans,” Núria Almiron acknowledges the effect animal agriculture has on the environment and its damaging contribution to global warming (1115). He draws on an argument made by animal advocates regarding the effectiveness of using environmental or climate change oriented arguments to highlight the effects of cruelty toward animals as a means of promoting animal advocacy. He elaborates, “Hence, it is very common in current advocacy campaigns and academic discussions to use climate change messages emphasizing the impact on global warming of factory farming along with, or even in place of, more radical and ideological messages emphasizing justice, abolition, and cruelty toward other animals” (1102). He notes that the environmental frame can also remind audiences of the ethical responsibilities they have in keeping animals and the environment safe. Another argument that is commonly used by animal advocates, he explains is that animal based products can have harmful effects on the human body. According to some animal advocates, Almiron says, introducing the idea of animal advocacy by emphasizing its harmfulness on human health can serve as a more effective way of producing a lasting commitment towards animal advocacy and is based on a self-interest framework. What he attempts to do in this article is to evaluate the two arguments to see which context frames the best way to produce a target effect on the audience. He concludes:

However, a clever strategy, according to the data reviewed here, may be to maintain a pluralistic approach, very much adapted to the different targets we address, as well as to avoid ecological aims in conflict with animal ethics and include the animal ethical claim in order to keep consistency, authenticity, and expectancy high. That is, to rank high in our advocacy toolkit the claim that to harm other animals is simply ethically

wrong, regardless how many other collateral benefits and reasons also justify stopping harming them. (1115)

Although many nations have already set plans to cutting carbon emissions in order to reduce the effects of global warming, animal mistreatment, be it industrial farming or animal agriculture, continues to be practiced at a large scale. Małecki et al. reflect that “the animal advocates’ interest in the impact of narratives is related to the fact that despite all the progress made since the nineteenth century in other areas, the systematic abuse of animals is still a common occurrence” (2). Animal agriculture is now a leading cause in environmental damage (Koneswaran and Nierenberg 578). The rise of industrialized animal agriculture has not only shown to be cruel to animals, but it has also affected the environment. Since animal agriculture produces CO₂ emissions into the atmosphere, they have a significant impact on the direct warming of the global temperature. In 2008, this form of agriculture had shown a contribution of 9% of the total emissions that were released into the air (Koneswaran and Nierenberg 579). The figures shown in Cassuto’s article, which was written in 2010, reveal that the amount of emissions released into the air as a result of animal agriculture has doubled over a period of two years.

Małecki et al’s study is carried out by conducting a large experimental project that includes thousands of reader participants and various genre literature (1). What is particularly unique about their study is that they attempt to identify what psychological mechanisms play a role in influencing the reader’s perspective. Before collecting their data, they began their study by defining the phenomenon they had chosen to concentrate on and gather information about. They identified what exactly it was that they would be looking for, whether it be the participants’ personality or general attitudes towards animals (25). In other words, they wanted to identify what actually influenced the way they perceive an animal story or any form of climate fiction. They realized that they were particularly interested in people’s

attitudes towards animals and wanted to see what impact the stories had in changing the readers' attitudes. In their study, before the participants began to read the story assigned to them, they were asked to fill in a questionnaire that could determine what type of personality the participant had and their worldview (32). Once the participants read the story, they were given a second questionnaire to measure the extent to which the subjects had been influenced. This way, the differences between how the participant responds to the questions in each survey can be identified. This determines to what extent their attitudes have been changed after reading the story. It is also worth mentioning that in their study, the participants had to write a short summary of the main events in the story they had read. This was done so that the researchers would check them for plagiarism and be assured that the participants had actually read the texts before answering the surveys.

3 Methodology

The methodology described in Małecki et al.'s book is appealing and other scholars can take their methodology into consideration when conducting new studies and forming questionnaires. What is appealing about their methodology is that they include a survey before the participants read the story. As previously stated, they use the first survey to gather information about the participants' personality and worldview. They then get the respondents to complete another survey after they have read the story. Getting information about the respondents' personality is particularly useful in drawing a comparison between before and after the participants read the story.

In my study, I also use some of Małecki et al.'s methodology. My project consists of two surveys mainly to see the difference before and after the participants read the story. General information about the participants' attitudes towards climate change is compiled from the first survey. The second survey, on the other hand, is meant to reveal how the participants perceived the story and whether or not it had an impact on them and the way they thought about global warming and how they related to animals in this context. Both surveys were done anonymously. In this way, having the participants answer the survey anonymously will have an effect on the likely truthfulness of the answers. The reason AMT was not chosen for this particular thesis project was because of its limitations in terms of the diversity of its participants, nor is it user friendly enough, comparatively speaking. It is also worth mentioning that AMT is strictly limited to American users, which means that users from a GCC country would not be able to participate in such a study.

As mentioned before, SurveySparrow, the online survey tool used in this study, has proven to be user friendly for the persons answering the online survey. The reason for saying this is because in responding to the survey, the participants engaged in a conversation with a chatbot in order to complete all questions included on the webpage.

3.1 Survey 1

The first survey (see Appendix A) was sent out to the participants via email before they read the story (See Appendix A). This survey was divided into three parts: Part 1. Attitudes towards climate change and the environment, Part 2. Background knowledge about global warming and action, and Part 3. Climate fiction. The first part was done to get a general idea of their personality and attitudes towards animals in the context of climate change, as Małecki et al. do in their study. For example, the participants were asked to what extent they agreed with the following statement “I believe that I must take part and contribute to my society’s efforts to be eco-friendlier.” The purpose of this question was to know if the respondents felt a sense of responsibility towards the environment. They were also asked whether or not caring about the environment was important, what it is that they do to care about the environment, if they thought it was possible to control environmental pollution and to what extent they cared about the protection of endangered animal life.

To add an additional dimension to this method, some background about the participant’s general interest in climate fiction and climate change was collected in Part 2 of the survey. This was mainly done to get a general understanding of the participants’ contextual and cultural background. It also aimed to get an idea of how much they know about animal extinction to begin with. They were asked what animals had gone extinct, which ones were currently endangered in their region and whether or not they believed it had anything to do with global warming. It is very important to keep in mind what kind of environment the respondents come from. Some environment-friendly vocabulary used in mainstream media does not particularly resonate with their conceptual idea of what is considered to be a “healthy environment.” For example, the terms “going green” and “greener environment” is perceived differently if the target audience come from a desert landscape that is “yellow”. The idea of greenery can be applied to ecological practices such

as forest conservation, but in a desert landscape it would make more sense to associate the idea of greenery with water conservation.

Another element concerning their cultural background would be the people who surround the participants. Clarifying whether or not they live in a society that is more or less conscious of climate variability and its causes also plays a role in shaping their attitudes towards the environment. Do the participants come from a community where environment-friendly activities and awareness fairs happen? To put it simply, what is being practiced around them? Gaining a sociological understanding of the participants' backgrounds, in this study, is not only helpful, but necessary in understanding the reception of the text in a different cultural setting, such as in Bahrain. For this reason, the participants were asked whether or not their country was doing anything to promote environmental sustainability and if their school has been making any effort to draw their attention to climate change.

Another way which would determine the participants contextual and cultural background and a way to measure their understanding of the urgency of climate change was by knowing whether or not they had been exposed to other climate fiction. This is why they were asked if they had read a climate fiction short story, novel or watched any climate fiction movies before. They were also asked to name them if they had.

3.2 Survey 2

The purpose of the second survey was mainly to get information that would shed light on to what extent the narrative influences the way the readers perceive the animal and their attitudes towards animals in the context of climate change. Additionally, this revealed whether or not their attitudes towards animals played a role in changing the way they understood the impact of the climate crisis on nonhuman species. By considering their reaction to animal narratives one can identify the elements of the story that are effective, or even ineffective in generating environmental concern. If the participants in the survey, for

example, claim that they think the story has had a positive effect on how they think about global warming, identifying what event in the story lead them to feel that way would help the researcher know what it is about the story that changed their mind. In other words, the researcher would be able to locate those effective elements within the story.

In order to confirm the participants' truthfulness in Małecki et al.'s survey, each individual was asked to summarize the main events of the narrative that they would be answering questions about. The respondents' summaries were checked for plagiarism to ensure that they had actually read the story. This is also something that is done in survey 2 to provide enough evidence that all respondents had, in fact, read the text.

The second survey was divided into two parts: Part 1. The reader's experience and Part 2. Attitudes towards climate change and the environment. Apart from writing a short summary of the story in Part 1, the participants were also asked if they had liked the story, what they thought about it and about the main character, what the character of T had been mostly concerned about throughout the story and to reflect upon how our relationship with animals had anything to do with environmental destruction. In addition, the readers were asked to comment on the following passage from the story:

Remaining would be only the pigeons and the raccoons. But it was not the domino effect he considered most often, simply the state of being last. Loss was common, a loss like his own; he couldn't pretend to the animals' isolation, although he flattered himself that he could imagine it. One day, he knew, it would be men that were last.

(Millet 29)

The purpose of including this passage in the survey was to see whether or not the participants were aware of the domino effect between the species under climate change and if they had anything to say about our connection to animals and the possible loss that may come about

with global warming. Most importantly, they were asked if they would recommend this story to someone else.

In Part 2 of this survey, the participants were asked the same questions they had been asked in the first survey regarding their attitudes towards animal conservation and climate change. The reason for doing this is to know whether or not their stance had been changed after reading the story. A comparison between their answers before and after they read the story was made to identify a change in opinions.

If Mayerson can tell us something about how Americans are influenced by climate stories, then my study can reveal how this climate fiction appeals to an audience with a different cultural background. The implications of this study can contribute to other work done on readers' response to climate fiction. Very little research has been done on cross-cultural readers' perspectives. As far as I know, no study has been done that is particular to readers of climate fiction in a Gulf Cooperation Council (GCC) country.

3.3 Limitations of the Study and Selection Criteria

My methodology is limited in some respects. The material I choose has not proved to have gained any popularity or attention amongst young Bahraini readers. In fact, I assume that many of them were, for the most part, ignorant about the author and her academic background. In this case, the participants were exposed to a new type of material they were not familiar with. Although some of them may be familiar with a few climate fiction movies, a great deal of them have in the past demonstrated an interest for Japanese Anime and other genre films that dominate popular culture. During the spring semester of 2018, when I was teaching those students, many of them started a Japanese Anime club at the school where they met once a week at to discuss their favorite Japanese anime.

Identifying the most popular climate fiction by looking at online reviews was possible for Mayson's project, considering he was collecting data from U.S. respondents. In my study,

I am more concerned about choosing a text about animals in the context of climate change that would be both appealing to young readers and short enough for them to go through the content within a limited frame of time. This study does not include an examination of how all high school students in Bahrain respond to climate fiction, but rather a smaller sample of them. For this reason, it is not possible to generalize their responses mainly because it is not representative of all high school students in the country. Additionally, Iossifidis's way of drawing implications from book club discussions can be beneficial in confirming assumptions about narrative efficiency. Despite the limitations in my chosen method, this study still remains unique in comparison to previous studies done in empirical ecocriticism and offers a content from the respondents and their cross-cultural reading experience.

3.4 What Type of Natural Landscape Do the Participants Come From?

This study concerns a region that has not been studied before, and in order to understand the responses of the participants, it is necessary to provide information about this part of the world. In a previous section, it was explained why people need storytelling to learn about important social matters that may be influential in forming a collective force and resistance to social, political and environmental problems that may occur within a society. The next factor to consider is the fact that readers from the GCC need to learn about climate disasters since they contribute to global warming. After all, global warming is a planetary issue that affects everyone. Knowing something about the natural environment can shed light on the climate problems they face in the region which creates a need for urgent action and a formation of a new environmental policy in the area. This section reveals what type of environment the participants come from and explores what climate problems pose a threat to the landscape.

Given their geographical location that covers most of the Arabian Gulf land, GCC states are susceptible to extreme weather and its impact. GCC states include The Kingdom of

Bahrain, The United Arab Emirates, Saudi Arabia, Kuwait, Qatar and Oman. Arid lands cover most of the GCC where rainfall is scarce and high temperatures can reach 50 degrees Celsius in the summer time.

All GCC countries face dangers in the form of water shortages, flooding, deforestation and droughts. Due to the rapid increase in population, water and energy demands are expected to increase drastically by 2030 (Qureshi 10). Countries in the GCC also face problems with agriculture. Given that the region has a very low arable land distribution within their territory, climate change poses a higher threat to their food production. Most of the population in the GCC concentrate around coastal areas, which are also vulnerable to rising sea levels (Hussein 112). If the sea levels continue to rise, a great deal of the infrastructure, reclaimed land and development can be subject to great loss. The losses of the coastline areas, due to the effects of global warming, also pose a threat of habitat destruction and reclamation, which in turn can cause economic losses, as well as losses of some sea ports, desalination plants, and fish farms (Al-Saidi and Elagib 3).

The use of air-conditioning also takes up a great deal of individual energy consumption. In a climate of 50 degrees Celsius, even air conditioning sometimes does not make much of a difference when people are trying to cool down. The energy consumed from using ACs is a further contribution to the increase of the global temperature (Ubaid 187). If GCC countries can figure out a different way of running air conditioners without running fossil fuels, that would have a great impact in terms of climate sustainability.

The smallest country out of them all, which is Bahrain, also suffers from freshwater scarcity. The population in this very small island gets its water supplies from desalination. Marine ecology in surrounding sea areas is at risk when large amounts of concentrated brine is added into the sea. The population growth is expected to strain this freshwater storage in

the upcoming years. Arable land only covers 10% of the country due to water shortages and poor soil quality (Bani 214).

3.5 Climate Change Agendas in the GCC That the Respondents Are Likely to Have Been Exposed to

As mentioned before, it is important to get a general picture of the participants' cultural background and attitudes towards Environmental destruction. Their perceptions of climate change may be influenced by how this challenge is addressed around them, in their surrounding environment. The collective efforts that a country makes or draws attention towards has an impact on how the youth of the community think about the climate issue.

Although GCC countries still continue to rely heavily on fossil fuels in a number of industrial plants, they have adopted new ways of approaching the energy consumption in the region. In the past two decades, GCC countries have invested in renewable energy and have managed to build some of the largest renewable energy alternative resources in the world. However, skepticism around their initiatives is likely due to the fact that their renewable energy technology is largely funded by their oil revenues which makes their efforts seem superficial (Atalay 206). In their article "Oil Revenue and State Budget Dynamic Relationship: Evidence from Bahrain," Kreishan et al. state "Bahrain is an open small economy and one of the oil exporting Arab countries which is heavily dependent on oil. Exports of oil is the primary source of government revenues, and its share ranges from 70% to 80% of total government revenues during the period of 1990–2017" (175). Given this fact, it is important to keep in mind whether or not the participants have been influenced by the advertisements of these initiatives by their government bodies. The question being asked here is have the participants of this study formed a sense of environmentalism from being exposed to how their country's advertise their climate change efforts and policy? Or do they view it as a superficial attempt to keep up with a friendly global image? For this reason, the

participants were asked in the first survey whether or not they thought that their country had been doing anything to combat climate destruction. The purpose behind this is to get an idea of how much the respondents might be influenced into taking the issue seriously by their authority figures. This section of the thesis offers an exploration of the climate change initiatives that are likely to have been advertised by local media and schools in their country.

As mentioned earlier, GCC countries heavily rely on their yearly oil production while also advertising an adoption of renewable energy technology and an effort in tackling energy consumption problems (Atalay et al. 206). The least dependent country on oil production, the UAE, and the most engaged in renewable energy production in its region, has advertised to have invested in a number of projects to lower the amount of greenhouse gas emissions (Atalay et al. 211). To increase climate resilience, the UAE has devoted large some of their budget to clean energy. Amongst those investments are the Mohammed bin Rashid Al Maktoum Solar Park and the Al Dhafra Solar Photovoltaic Project, which are two of the largest solar power plants in the World, a clean coal power plant, named Hassyan, the Barakah Nuclear Plant which is expected to cover up to 25 percent of the country's electricity, the development of a low-carbon city, Masdar City, and the development of the world's largest waste-to-energy plant (Krane 64).

Saudi Arabia, a country that managed to establish mass rice plantations in the middle of a desert, hosts Dumat Al Jandal, which is the largest wind farm in the region and reduces around a million tons of CO₂ emissions each year (Giani et al. 2). Qatar has invested in some solar-powered stadiums that is planned to be used in the upcoming 2022 FIFA World Cup (Scharfenort 220). This plan, however, was viewed with skepticism given the corruption behind their hosting rights in the world cup and circulating rumors regarding bribery of some FIFA officials (Henderson 289). It has also plans to plant one million trees in the country, a technological solution which has been named the "greening of the desert" (Weber 181).

As part of Bahrain's National Water Strategy 2030, the country established a wastewater privatization programme to manage water consumption (Smith 4). The manufacturing of solar panels was initiated by the establishment of a Green Energy Factory named Solartecc (Solartecc 1). There are currently around ten Recycling companies functioning in the country including, Alfa Express Co, Falcon Factory, Bahrain Contract Cleaning , Nidukki , Gulf City Cleaning Company, Merc Company, and Bahrain Waste Treatment Company (Thirteenth Goal 3).

One unexplored study regarding transportation consumption would be plane travel in Middle Eastern countries. Plane travel in these countries (per individual) is relatively low in comparison to Europe (ICAO 3). Travel restrictions, border controls and higher flight prices make it more difficult for mobility between countries to be practiced. The cheapest flight ticket from Bahrain to any destination costs around €94 at a minimum. In Europe, however, the cheapest flight ticket from one destination to another can go as low as €18. Having cheaper flight tickets makes it far easier to attract a larger number of travelers. As airplanes produce large quantities of carbon dioxide, lowering the numbers of plane travels and demand for air traveling means that there is less pollution in the air. Given the lower figures of travelers in the Middle East, one might argue that it demonstrates that people in the GCC are not entirely careless about travel consumption and it is likely that the respondents of this study may be amongst this group.

Despite their developments, GCC countries still suffer from limited water resources and need to strengthen their freshwater supplies and come up with a strategy that will minimize Global warming's effect on water supplies. In gulf countries, people are generally cautious about their water consumption. For decades, GCC local TV channels have shown short clips, between advertisements, that could last up to 3 minutes to remind the locals of their water consumption. The general public is generally trained not to consume too much

water. It is important to note that the previously mentioned developments in the GCC are advertised for youngsters in the country to not only see, but to also take part in. The fact that these developments exist around them may reinforce a sense of consciousness about the climate change issue. It may also help increase the sense of responsibility they feel about the issue. The purpose of mentioning all of these initiatives is to provide some background knowledge about what ideas about climate change the respondents may have been exposed to. Those climate change policies are advertised in their news broadcasts on Bahrain TV on a daily basis. Whether or not they believe those policies to actually have made a change or not is something that is revealed in their survey answers.

3.6 The Respondents

So what does all this mean for a group of high school students attending their last year of secondary schooling? For one thing, it means that they are growing up in an environment where professionals are, to some extent, aware of climate change, global warming and environmental sustainability. Ideas such as recycling, hybrid cars, solar panels and energy consumption are familiar to them. The high living standards and quality of life allows many Bahrainis to have access to a great deal of services. The World Bank recognizes the country as having a high income economy (Bahrain Data). The GDP per capita was recorded to be at \$22,878 nominal, 2020 and \$50,057 PPP in 2020 (Bahrain Data). It is worth mentioning that all the participants of the study hold Bahraini passports and have been attending government school since grade 1. There are also some third generation Persian students, one Pakistani immigrant and another from Yemen, but they are all now Bahrainis by naturalization. Given that all students are Bahraini by nationality, they all receive social benefits from the country. This means that they all receive free government healthcare, free compulsory education up to 12th grade, the ability to apply to government housing or land that is subsidized by the government upon marriage, and some social benefits for households in need amongst other

benefits (Social Support). The fact that most of the students are given their personal school iPad to work with from home and their wide access to wifi internet allows them to be exposed to a great amount of resources, news websites and literature on an international scale. Renewable energy innovations in their country and surrounding countries are talked about in local TV news channels, radio stations and at school. Third year high school students are also exposed to environmental and scientific articles, such as those found in National Geographic magazines, during their English language classes as part of their preparation for their IELTS exam. Those public school students not only learn to read and discuss environmental issues in their native language, but are also trained to do so in English.

3.7 Local food habits

One of the fundamental questions about support for Animal Rights is whether or not it makes a difference to be vegetarian or not. There is a mixed opinion regarding this issue and gaining some knowledge about general food trends in the GCC can be insightful when thinking about the participants' standpoint when it comes to animal welfare. Although there are vegetarian and some vegan options in local restaurants in Bahrain, local food habits still tend to include meat in their food options. People from the gulf are generally concerned about whether or not their food is Halal (slaughtered in the Islamic way), and might revert to vegetarian options if they are abroad where Halal meat is scarce. Whether local food habits have anything to do with low arable land remains unknown, but that can be an indication as to why people include fish in their diet in the GCC as fish farming has been one of the easiest ways to maintain food security for centuries. In a 2019 article published in the *Jerusalem Post*, journalist Tara Kavalier states that,

In the Arab world, the concept of veganism is often met with confusion. Many people do not understand why someone would adopt a diet that excludes meat or animal-based products or think that there is something wrong with you for undertaking such

an endeavor. However, these attitudes are now changing. Veganism is on the rise in the Arab world. (1)

She reports that their veganism is linked to health issues, a rise in a concern for the environment and for animals in general (2). Vegan options, she states, is at a fair length available across GCC countries including the UAE, Bahrain and Kuwait.

An example of vegetarianism becoming part of the GCC food market would be the success story of a vegetarian food outlet in the UAE called Just Falafel which has now 27 branches of the food chain in 6 countries (Jabeen and Katsioloudes 2). Further plans have been set forth to form different franchise partners in Saudi Arabia, Lebanon, Jordan, the United Kingdom, Canada and The United States.

3.8 Representation of Nature in Arabic Literature

To gain an understanding of the participants' context, it is helpful to get a general idea of how nature has been represented in Arabic literature. Many of the participants may have been exposed to those types of Arabic literature and might have been influenced by them. Some knowledge about the representation of nature in Arabic literature allows for a greater understanding of the cultural context of both the general public and the participants. For hundreds of years, Bahrain has been called the land of a million palm trees. Ecofiction has a long tradition in Bahrain. For decades, Bahraini government schools have taught short stories, novellas, poetry and fables that narrate the existence of palm trees and the devastating disappearance of what used to be the many water springs in the country that have dried out as a result the country's modernization and business. Poems about palm trees that are part of the government school Arabic literature syllabus include the following: taught in the 4th grade, "Farewell to the Green Lady" by Ali Abdullah Khalifa is a nostalgic poem that talks about the loss of many palm trees during the industrialization of certain areas in Bahrain (MOE Gov 1). This poem appears, for the second time, in the first secondary grade Arabic Literature

course book. Another Arabic poem taught in 4th grade is “The Story of the Palm Tree” written by an unknown Bahraini poet (Arabic G4 63). “The Story of the Palm Tree” depicts a romanticized image of palm trees personifying them as lengthy women who stand tall as if they were reaching up to the sky. The speakers in the poem are the palm trees themselves and they are the ones who compare themselves to tall women. The trees are meant to be seen as solid plants with tasty dates that produce enough food to nurture all people on the land.

Another piece of literature that celebrates the existence of the palm trees in the country is a poem taught in 5th grade is Ahmed Mohammed Al Khalifa’s “Bahrain Speaks” (Arabic G5 50). In this poem, the speaker associates the job of finding pearls amongst pearl divers with the beauty of the palm trees that grow near the beach. In the second section of the poem, Bahrain is personified and becomes the speaker. It is here that the listener of the poem learns about various old Bahraini words. A poem from the 6th grade curriculum is “The Crooked Palm” by Ahmed Shawky (Arabic G6 90). This piece of literature narrates the story of a young girl named Maha who is met by a crooked palm tree when she is walking through a garden with her father. Maha stops to ask her father if there is any chance of saving the palm tree, but her father declines her request claiming that it is too late to save it. He says “and the young, if neglected by a child, stumbled in old age” (Arabic G6 90). Given that all the participants of this study are public school students, it is very likely that they have been influenced by the ideas depicted in the poems. It is possible that a lot of them have formed an appreciation towards palm trees and what nutritionist qualities they have to offer-

Recently, climate fiction is becoming more commonly seen in Arabic Literature in the Middle East and North African MENA region. In his article “Environmental protection and the modern Arabic Novel,” Desiree Custers, an intern at an environmental organization named EcoPeace in Amman, Jordan explains that “The bond between man and nature has often been a topic in modern Arabic literature because of the relationship many Arab nomads

and farmers have with their land and earth” (2). A recent examples of climate fictional stories includes the graphic novel *The Solar Grid* (2021) by the Egyptian novelist Muhammad Fahmy. This novel depicts a futurist dystopian world that has been stricken by an environmental catastrophic event and is abandoned by the earth’s population (4). In the narrative, most people are meant to be living on Mars and in the beginning of the story, a couple of children are shown scavenging the lands. They then witness something that will cause disruption to the atmosphere between Earth and Mars. The main theme of the novel is centered on the corrupt businessmen who profit from the climate catastrophe.

Another novel is *Cities of Salt* (2007) by a Saudi writer named Abdelrahman Munif. This has gained recognition amongst well established scholars and was praised by the postcolonial scholar Edward Said (Custers 5). *Cities of Salt* tells of a story that is set in a desert landscape that is in the state of deterioration due to exploitation of the land after an oil discovery takes place. Traditional desert community and nomadic life in Saudi Arabia is disrupted by foreign intervention as a result of the oil discovery. Those communities are then transformed into urbanized areas until the land becomes a police state.

Munif also explores the human/nature relationship in traditional nomadic communities in his 2007 novel *al- Nihāyāt*, which translates to Endings in English (Custers 6). The events of the narrative revolve around a desert drought which causes a freshwater crisis to the nomadic inhabitants of the area. The protagonist of the novel attempts to raise his community’s awareness of the problem. Towards the end of the narrative, the protagonist dies trying to save a man in a sandstorm. His death is what finally drives the community members to work together to prevent future droughts from occurring.

Another literary text that explores the theme of climate change is a novel written by the Lebanese writer Ghassan Chebaro named *2022* (2009). As the title of the book states, the setting of the story is 2022 revealing a world destroyed by the effects of pollution and global

warming (Custers 9). The protagonist, a Lebanese climate activist is constantly ignored by people when he suggests alternative ways to use energy resources.

As demonstrated from the mentioned fictional stories, climate change has been strongly linked to water issues in the region in Arabic climate fiction. Arab novelists have contributed to climate literature in the MENA region. The question at mind here is whether or not the target audience of this study have been exposed to this literature or not. If so, this would mean that the participants would be well exposed to climate fiction and their interest in climate change issues would be high enough for them to advocate change. The respondents are asked to name short stories or novels they have read before that have to do with climate change and another piece of information that they reveal in the survey is whether or not they liked the piece of literature. If they reveal that they had liked Arabic climate fiction more than Lydia Millet's story, this would be a topic worth investigating.

4 Analysis

As mentioned in the introduction, the purpose of forming the surveys is to evaluate the effect of a story on respondents. And more importantly, it answers the following question: does the way they think about the climate issue change after reading the story? In this chapter, the participants' answers to both surveys are revealed and analyzed. As mentioned in the methodology section, the first survey revealed some information about the respondents and how they think about climate change. It is important to remember that when the students were answering the first survey, they had not read the short story yet. The story was only shared for reading after the first survey was completed. The participants then answered the second survey that contained questions related to the way they responded to the narrative. Although there were some grammatical mistakes in the participants' comments, they were still legible to read and use for the analysis in this study. From the short summaries the participants wrote, it was clear that they had understood most of the events in the story and well enough to draw conclusions and opinions from the text.

4.1 Survey 1

When asked to what extent they believed that they must take part and contribute to their society's efforts to maintain the environment, more than half of the respondents strongly agreed that they should, which showed in them a strong sense of responsibility towards making an effort to be eco-friendlier within their society. 30% of them, however, responded that they did not feel a strong sense of responsibility towards the issue. While all of them claimed that they believed that caring about the environment was important, 50% of them admitted that they thought that controlling global warming was not fully possible and that only pollution could be controlled. They believed that it was possible to slow down the effects of global warming, but not really stop it from happening. 20% of the respondents, on the other hand, said that it was impossible to control both pollution and global warming.

It was important, for the sake of the study, to gain some knowledge about what efforts the participants actually make in order to preserve the environment. It is one thing to say that a person cares about the climate crises, but if he or she does not make any daily efforts to reduce the impact of pollution, any claims they make may not be considered particularly viable. In this case, their actions would not live up to their viewpoints. When asked in the survey about what it was that they do in their daily lives to care about the environment, only 50% of them claimed that they use reusable bags, 40% of them limited the amount of air conditioners being used in their homes, and only one out of all the participants used public transportation. 90% of the respondents did, on the other hand, state that they practice recycling a lot of their items and make an effort to save electricity and water.

Since the participants would later be exposed to an animal narrative, it made sense to ask them whether or not they cared about the protection of endangered animal life. More than half of the participants, 60% of them, stated that they only somewhat care about animal welfare, whereas the remaining 40% said that they really care about animal welfare. When asked how they relate to animals and other species in the context of climate change, the participants' responses varied to some extent. Some of them associated themselves with the animals stating "They might suffer in some climate changes just like us." Another was able to predict how humans might be affected by environmental collapse as well in the following comment "When it comes to climate changes, we will see the animals being eradicated first and then, it will be our turn."

Another vital part of studying the participants' reading response to an animal extinction narrative is knowing whether or not the readers have a background knowledge about extinct and endangered animals. Knowing whether they have searched for this information before, have looked into the topic or learned about it in general can predict the answer to the following question: will the readers be able to relate to the main character or to

sympathize with the animals? For this reason, the participants were asked a few questions to see if they could name any animals that had gone extinct, or were currently endangered in their region. All but one participant were able to name a few extinct animals. Among those animals were the dodo bird, pyrenean ibex, tasmanian tiger, mammoth, sea monk seal, the western black rhino and northern white rhino. Amongst the endangered animals in their region that they named were the graceful prinia, the chlamydotis, caridean shrimps, the arabian oryx, thyroid gazelles, greyhounds, desert hares, the slender horn gazelle, striped hyenas, the Egyptian vulture and even the camel. While most of them believed that the endangerment of animals was the result of global warming, only 60% of them strongly agreed that humans were responsible for saving the habitat of animals.

As mentioned previously, the participants' background knowledge regarding animal extinction and climate change is an important background for this thesis project. An equally significant aspect to this background would be whether they feel their country is providing them with a sense of safety, readiness and relief by acting upon climate damage. In the first survey, the respondents notably answered to whether or not they thought that their country was doing anything to sustain the environment. Only half of them answered yes, but when asked whether or not the school was making any effort to draw attention to environmental destruction and promoting eco-friendly action, 70% of them responded yes. Regarding Bahrain's efforts in tackling the climate problem, the participants mentioned that it was now illegal to hunt endangered animals in the country, including some forms of fishing. They also made reference to the Bahrain Progress in Sustainable Development Goals 2030 as part of the climate action policy in the country and mentioned its participation in the Paris Agreement. They also mentioned that they were taught how to recycle plastic and use solar energy instead of fossil fuels at school, that they had learned about the importance of keeping the environment clean, and growing more trees, that they had written school essays about climate

change and that they helped manage some environmental activities at school and had weekly cleaning duties at the school. One of the participants stated that “Starting from this year, a portion of the school lights has been working on solar panels and that’s just the beginning. Students as well such as I and some of my friends have proposed ideas that can and will eventually be implemented to be sustainable and eco-friendly step by step year after year.”

Furthermore, familiarity with climate fiction can provide some insight about how much a reader has actually thought about climate change in the past. It also may mean that the readers have been exposed to stories that aim to depict possible futuristic scenarios about what a climate disaster might look like. Climate fiction stories that can also be considered dystopian catastrophic depictions of a world that has been subject to severe climate change events might be something they have been exposed to and are familiar with. If the reader had been exposed to this type of fiction in the past it could mean that he or she would feel a sense of urgency about environmental collapse. Having been exposed to other pieces of climate fiction in the past also reflects that the participant is very likely to be exposed to other climate fiction texts after reading the short story for this study.

When the participants were asked if they had read any other climate fiction texts or had seen any movies that revolve around the theme of climate change, only 30% of them said that they had read another climate narrative and only 50% had seen a climate fiction movie. Amongst the novels they read were *The Drowned world* (1962) by J. G. Ballard, *Solar* (2010) by Ian McEwan and the 2005 novel *Fifty Degrees Below* by the author Kim Stanley Robinson. What one participant liked about the books was the fact that they appeared to be straight forward and realistic towards the climate problem. Amongst the movies that they reported to have seen were *The Day After Tomorrow* (2004), *Into the Storm* (2014), *The Colony* (2013) and *Snowpiercer* (2013), *The Planet Blue* (2001), *A Beautiful Planet* (2016), *Ice on Fire* (2019), *Geostorm* (2017), *Interstellar* (2014), *The Wave /BolGen* (2015) and *The*

Story of Plastic (2019). Some of the following comments reveal what it was that the participants liked about the movies: “From what I understood about *The Day After Tomorrow*, it highlighted all the possible climate changes problem that we will be facing in the near future.” Another mentioned that “the plot of *Geostorm* follows a satellite designer who tries to save the world from a storm of epic proportions caused by malfunctioning climate controlling satellites. This gives people an idea of what the consequences of our present actions could have on us in the future.”

4.2 Survey 2

Knowing how to draw conclusions about the impact of the short story on the participants and their attitude towards animals and climate catastrophes was a difficult task. First, what the participants thought about the story was reflected upon in this survey. The readers were also given the chance to share what they thought about the main character and how the character related to the animals. Second, a comparison between the participants’ attitudes towards ecological and animal extinction was done before and after being exposed to the narrative. This was done to find out if they would feel more strongly about animals and climate change after reading the narrative. As mentioned in the methodology section, the participants were required to write a short summary of the story they had read. This was done to be sure that participants had actually read the short story before completing the survey.

The first question to aid this assessment was to see if the participants actually enjoyed reading the text. 80% of the participants did report to have enjoyed reading the story, whereas the two remaining readers did not find the narrative to be meaningful arguing that it had been a boring read. Although they both had expressed a concern for animal life protection and climate change, their responses clearly indicated that the narrative had no influence on their views. From the survey, it was also revealed that 90% of them said that they would recommend the story to someone else. Their reasons include that “This story was Something

different than another stories and to get some knowledge on wildlife as well.” One reader said that it addressed urgent questions, another argued “because it was interesting and to make people more aware of the animals in captivity and in the wild the greenhouse gases that can change everything for both humans and animals alike we have to be aware.” One of the comments from the participants suggested that there was a gap between the western ideology of environmental collapse and the way people in the GCC region respond to climate change. This reader thought that the story would be a good recommendation for other Arab readers to read mainly “So that people in our region will know how western people think.” What this statement reveals is that the participant has kept in mind that the short story was written by a western author. This statement may also entail that the reader perceives the story as one that represents western thought about the climate change issue.

The way the readers viewed the main character varied significantly. Three of them viewed the main character as absurd, while most of them thought that he wanted to get close to the animals and understand them. A couple of them said that he wanted to domesticate the animals and one viewed the man as part of the animal community, saying that “[h]e felt like he was one of the animals. He was part of their community.” 90% of the respondents acknowledged that T’s main concern in the story was animal extinction, while three of them said he was mostly concerned with climate change. One respondent claimed that “[h]e was worried that animals would become extinct and that there won’t be many species left.”

Taking into consideration the participants’ level of English, all of them were aware of the two major themes in the story which were animal extinction and climate urgency. One respondent commented on the idea of aloneness within the context of climate change stating that “T thought that the dominos effect (how one small change effect big things) is not always the reason for an animal species to go extinct. Sometimes it’s the thought of being the alone or lost.” The way another reader analyzed T’s character was by acknowledging that he must

be suffering emotionally from something that was not mentioned in the text. “T was a lonely guy and had probably suffered tremendous loss in his life and it gave him comfort to sit with the animals.” While commenting on the main character’s psychological state, this participant also showed an awareness of the two main themes in the story, climate and animal. Another respondent showed an awareness of the human animal hierarchy. This respondent perceived the main character as a man that saw himself above animal species claiming that he was constantly concerned with “man's inflated sense of self.”

One of the most fundamental questions in analyzing “Zoogoing” is how the human/animal relationship should be defined. This was also a matter that was examined when looking at the responses of the participants. In survey 2, the readers were asked what our relationship with animals had to do with climate change. The answers of the respondents varied, but what they all had in common was the sense of responsibility and duty they felt towards saving the animals. Apparently, the story had encouraged the participants to think about their role in environmental care and its importance in slowing down the effects of global warming. Their comments demonstrated that “[a]s humans we have a responsibility to animals because of the climate change.” While another said that “[w]e all have a duty as humans to play a better part in the world to protect all animal species in this ever changing world from climate change.”

The story also encouraged some of the readers to imagine potential futures. This was demonstrated while they spoke about a need to “protect” the animals. In the findings, one respondent claimed that “animals need to be more protected otherwise they will die out.” From the comments, it also showed that one respondent was thinking about possible solutions to the problem. “It's depending [It depends] on the animal's. Forest animal's [animals] are the most affected on the ecological condition. If we can utilize the technology we might do

relocating animal's [we might be able to relocate animals]. Only we can hopefully alter that!!”

What’s more, is that a respondent was also able to recognize not only a gap between T and the zoo animals, but also how the human species have come to grow distant from animal species. This reader made a link between the increase in pollution and the distance between species: “With the rise of CO₂ level around the world. Humans have mainly focused on ending climate changes thus, us growing apart from animals and focusing on them less.” Although it may seem on the surface that the respondents’ self-responsibility is well intended, or even benevolent, it may also come across as a statement that is reflective of a superior ideology in terms of species rank. To put it another way, the responsibility that the participants express in their comments may entail that they see themselves, as human beings, superior to that of other living species. They may also view themselves as the only beings that are powerful enough to save all other species.

Asking the respondents what our relationship with animals had to do with climate change in Survey 1 can be regarded by the participants as a question that required an answer that spoke about all people in general. In the first survey, the question could have been either about people in general or the participant’s themselves and their relationship towards animals. To make it more personal, the participants were asked again in Survey 2 how they themselves related to animals and other species in the context of climate change. In the first survey, when they were asked the same questions, much of their answers revolved around the loss of animal habitat. In fact, the word habitat was repeated three times amongst their answers. The second survey, in comparison, revealed a slight shift in answers. This time, one of the respondents showed a more emotionally driven response by saying “[i]t’s a bit sad.” Another reader expressed a concern for food supplies for all species, claiming that the food chain could possibly fall out of balance. This respondent stated that “[we] must do something

to help tackle the climate change as many animals will be extinct and that will cause problems in the food chain.” This comment can be understood in two ways. The participant’s statement here could suggest that the reader had no particular empathetic feeling towards the animals generated from the story, but rather a self-interest driven concern for food supplies. This comment also might mean that the participant here was empathetically concerned about all species being affected by an imbalance formed in the food chain. Additionally, two participants showed a sense of companionship with the animals in terms of being affected by changes in climate that are predicted to come. One respondent commented that “[w]e all change with the climate” and another showed an awareness of the recurring violence against nature claiming that “[a]nimals leaving us for good due to humans [human] activities is just the beginning. Soon even humans will be troubled by our activities and find it hard to live on earth.” Given the pessimistic depiction of the future portrayed in the story, one participant seemed to try to be positive. Seemingly, the narrative made this reader think about the efforts that are currently being made to tackle the climate problem. The comment stated: “I think there is a lot of people doing amazing work to protect all animals and species in the world.”

4.3 What Has Changed?

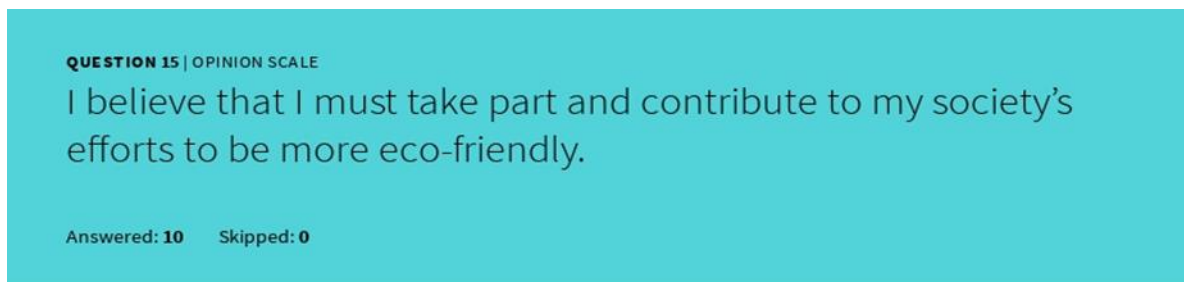
What can be said from the responses and observations about the project is that the readership of “Zoogoing” appeared to have made a positive impact on the way the participants respond to the idea of climate change. The respondents were asked twice about the extent to which they agreed that they believed that they must take part and contribute to their society’s efforts to be more eco-friendly, once before reading the story and the second time after they had read it. They were asked to rate their answers between the ranges of 1 to 10, 1 showing the least agreement with that statement and 10 meaning that they strongly agreed. When asked for the second time, all of the participants rated their answers between 8 and 10. Before reading the story, 40% of the participants rated their answers below 8. This reveals that they now feel a

stronger sense of responsibility about the issue than they had before reading the story (see figs.1 and 2).

Figure 1: Before reading the story



Figure 2: After reading the story



There was also a slight increase in the participants' concern for environmental justice compared with how they felt about it before reading Millet's story. When asked whether or not they thought caring about the environment was important, two of the participants claimed that it was important to a certain extent and only 60% of them strongly agreed with this statement. This was before reading the story. After reading it, on the other hand, 90% of them strongly agreed with the importance of environmentalism in this sense (see figs. 3 and 4).

Figure 3: Before reading the story

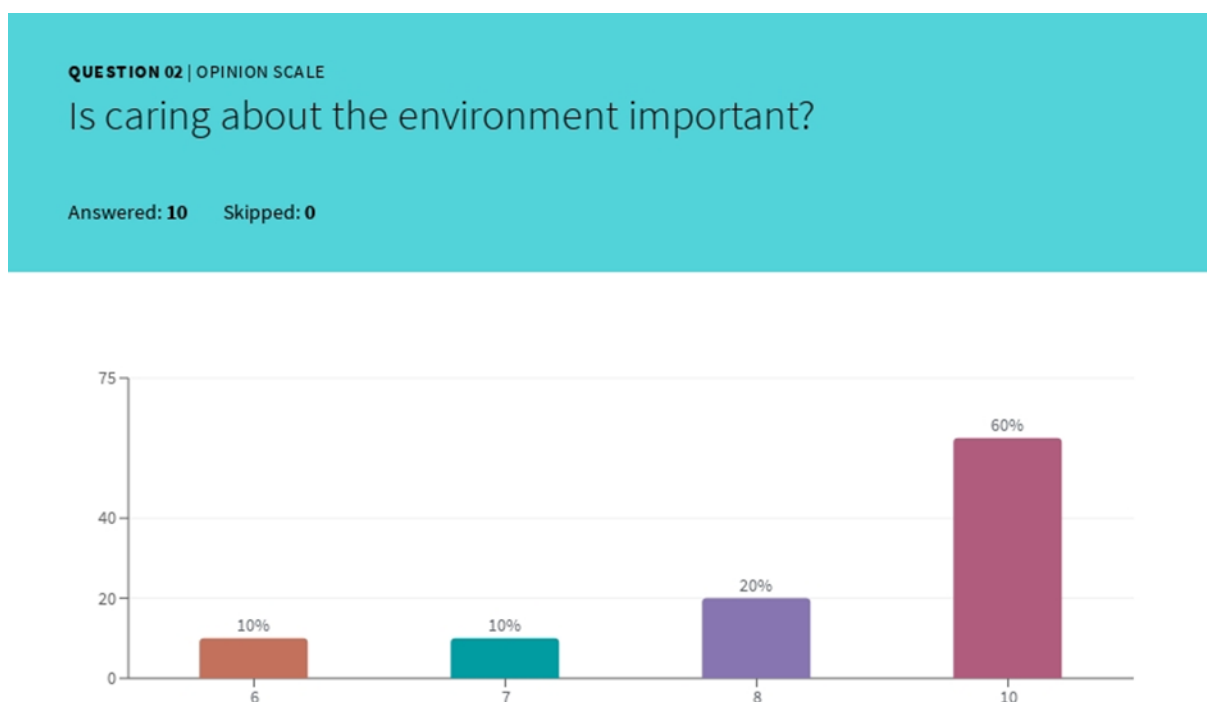
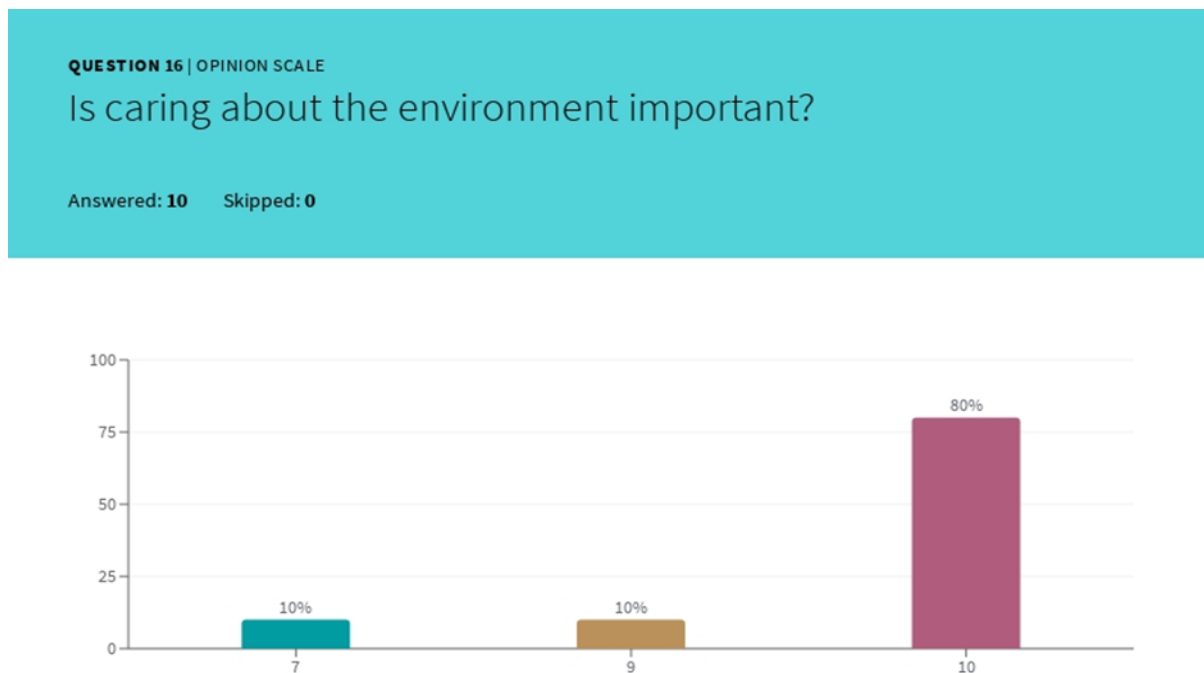


Figure 4: After reading the story



A couple of participants also showed a shift in attitude towards resolving the climate change problem. Before reading the story, 20% of the participants claimed that it was impossible to control environmental pollution. This changed after they had read the story. In the second survey, the participants were asked the same question and the results showed that two more participants believed it was not fully possible to do so, while the rest of the group thought it was possible to some extent or believed it was somewhat possible. 30% of them claimed that although humans could slow down the effects of global warming, they could not really stop it from happening, that although pollution can be controlled, global warming, on the other hand, could not.

Moreover, although the story's main theme revolved around animal wildlife and conservation, the participants showed no change in how much they cared about animal life. Their concern for wildlife conservation remained the same. From what can be said from the results of the survey, this animal narrative made an impact on how they thought about climate change per se, but not particularly about animals or animal conservation.

As stated before, the participants' attitudes were explored before and after doing the reading in order to measure the extent to which the story made a difference to their thinking. In addition to this, they were also asked to do their own self-reflection. They were asked on a scale of 1 to 10, 1 being the least and 10 the most, to what extent they thought the story changed the way they thought about climate change? 60% of them claimed that it had strongly made a difference, their answers ranging between 7 and 10, while 40% of the participants claimed that it had not made much of a difference (see fig. 5).

When asked whether the story made much of a difference as to how they thought about animals, their answers were almost the same regarding the way they thought about climate fiction. In fact, they were slightly less. In this question, only 10% of them strongly agreed with the statement, choosing a rating of 10. Figs 5 and 6 reveal that the participants thought that the story had more of an impact on the way they thought about climate change rather than animal conservation (see fig. 6). The fact that the story made a difference to how they all felt about climate change but not animal protection can be considered as a commonality between their answers. They all appeared to have the same response in that regard.

Figure 5: shows how the story changed the way the participants thought about climate change

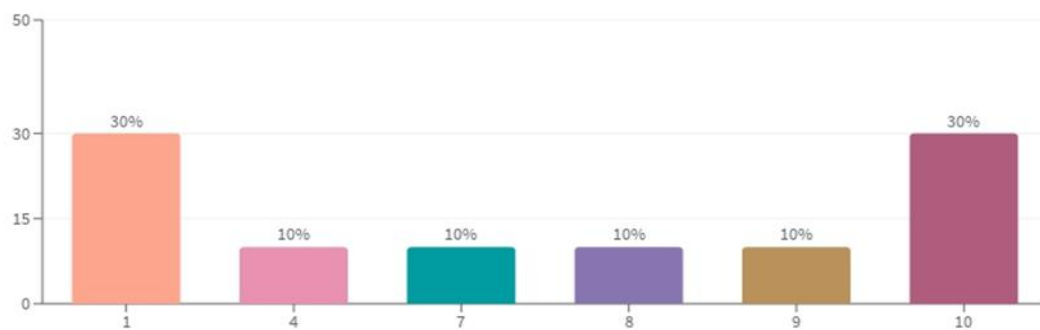
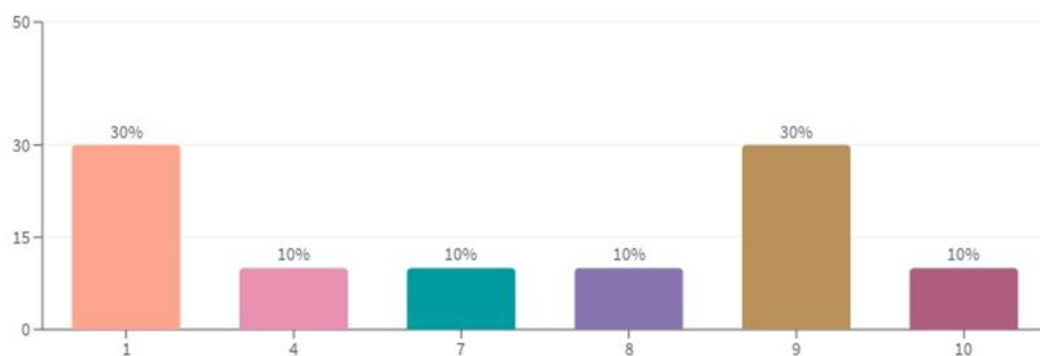


Figure 6: shows how the story changed the way the participants thought about animal welfare



Importantly, knowing how much thought the participants put into analyzing the story and whether or not they did it independently or discussed it with some of their colleagues provided an idea about how much they thought the topic was worth thinking about. Hearing what their colleagues had to say about the narrative could have influenced the way they commented about the story themselves. Towards the end of the survey, they were asked if they had discussed the story with anyone else and most of them reported that they had discussed it with either their friends, colleagues or family members. 60% of the participants answered yes to this question, while the remaining 40% said that they had not discussed it with anyone. However, from the answers in the second survey, this did not mean that keeping the story to themselves would hinder the quality of their analysis. In fact, some of the participants whom did not discuss the story with anyone else provided very valuable input to the study and seemed like they thought about the elements of the story quite thoroughly. One of the purposes of asking this question is knowing whether or not this story managed to generate any group or peer discussion, which it turned out to have done in the end. Therefore, one can argue that even if a story had not made a difference to the readers' attitudes towards climate fiction, in this case, at least it has generated a discussion about the topic. In a sense, this is the purpose of bringing up those ideas, to generate discussions and thought. Discussing the narrative with other people can bring about environmentalism and consideration for the topic amongst to those who listen to the participants describe the story. In other words, if the participant talks about the story without particularly being affected by it, the person listening to the participant talk about the story might generate a sense of environmentalism for that listener.

4.4 A loss of purpose?

The fundamental question to ask when reflecting upon the story and the findings of this study is: why has the narrative only strengthened the participants' sense of

environmentalism, but not made them care more about animals in general than they did before reading the story? One might think that Lydia Millet's intentions of writing the story were both to generate climate awareness of global warming as well as influence the way people relate to animals. Since the story is, to a great extent, an animal narrative, one might assume that the readers would end up caring more about animals after they had read the story. From the findings in this study, that was clearly not the issue. It is worth being reminded that the purpose of this thesis is to examine the influence climate fiction has in changing readers' attitudes towards climate change as well as non-human species. Given the assumed purpose of the story, this question is worth investigating.

There are two primary reasons why this story might not be motivational to the readers' sense of animal life protection. The first might be related to the way the animals were represented in the story, and the second could possibly be due to the distance the character T is described to have from the animals in the narrative. As stated earlier, T expresses his dissatisfaction of the animals' rejection of him exemplified in the way he reaches out to touch one of them. Since most of the participants reported to have liked the story and thought it was interesting, the lack of plot, evidently, showed to have nothing to do with the participants' opinions about the main events of the story and their opinions about animal protection. One might argue that there was actually a lack of representation of the animals in the storyline, or a limited depiction of the true nature of the animals in the story. As mentioned before, readers were not really invited to see what the individual species were actually like. Animals in the story were generally described in groups or individually, but most importantly, they were all described in the same manner. No description of the animals' personalities was provided or any form of personification in the text in reference to them can be found. Arguably, T appears in the story to be distant from the animals and has a lack of sympathy for the animals because of his desire to domesticate them. In fact, one respondent

viewed the character of T as somewhat of an absurd man who was psychologically disturbed. This might have been a reason for the lack of change in how the participants thought about animal conservation.

The poor image of the animals that were being described might also have something to do with the readers' interest in the animals themselves. Although there were some elements in the animals that might have been interesting to the reader, such as the wolf's gaze that bore a sense of directness that was "unlike the directness of men" and the Sumatran rhinoceros's singing that was "difficult for the human ear to follow" and somewhat similar to that of the singing of the humpback whale, much of the description of the animals might not be particularly viewed as attractive to the reader's sense of imagination. The readers may have been affected by T's boredom from watching the very motionless life of the caged animals. As T reflected in the story, life in the wilderness must have been far more interesting than life in captivity where life was consumed by only one activity, which was waiting for either food or death. As stated earlier, what Millet was able to do in her narrative is to form a sense of distance between the reader and all animal species. The reason behind assuming that the readers in this study were, to a great extent, influenced by this existing gap between humans and animals is because a number of the participants commented on the "growing distance" between the species. In fact, the word "distance" was repeated on several occasions in the answers of the second survey. As mentioned previously, this notion of distance can be problematic and is the second reason that might have played a role in the minimal effect on the readers' concern for animals. The existing detachment in the story, in this case, appears to have made the participants reflect upon the distance they have from coming close to a solution and being actively involved in making change happen. In this way, "Zoogoing" helped the audience overcome the distance they had in their minds with the future of the ecological condition in the world and how they thought about animal life extinction. On a

positive note, the participants' ability to be affected by T is also a sign that they were able to sympathize with the main character. The only problem here is that they might have ended up feeling more sympathy towards T rather than feeling it towards the animals. Their reactions prove that that focus of the story was more about T than it was about animal extinction, at least to the readers, in this case.

5 Conclusion

What is original about this thesis is that it has contributed to the study of empirical ecocriticism. It has offered an exploration of the reception of an extinction narrative amongst a group of youngsters in a GCC country. While previous studies have shown readers' responses of western audiences, this study has offered the reactions of Bahraini readers whose traditions, cultural backgrounds and perspectives differ greatly from the Eurocentric perspectives.

In the first half of this thesis, I offered a brief analysis of Lydia Millet's short story. In reading the analysis, it is important to note the difference between the analysis offered in this thesis and the analysis of ordinary reading practices. It is also important to acknowledge what differences might occur from an analysis done by a student of literature and a general audience. The difference between them is that, in the introduction, I offer a close reading and explore how Millet's literary text works. Although the participants of the study read the text and engaged with it, they did not explore all the literary elements of the text that would be offered in a literary analysis, for example. What is also offered in the introduction of this thesis is different possible ways in which the readers might interpret the story themselves. The intentions of doing this is to view the narrative from different angles, keeping in mind the possibility that the readers may differ in points of view and might focus on different elements comparatively speaking. As explained in the analysis section of the thesis, it was revealed that some readers enjoyed the story, while others did not. While one respondent said that the story was boring, another stated that it was interesting: "it was interesting and to make people more aware of the animals in captivity and in the wild the greenhouse gases that can change everything for both humans and animals alike we have to be aware." In the analysis section, it was also revealed what the participants thought about the main character. While some viewed the character of T as an absurd man, others thought he wanted to

domesticate the animals. One participant also thought that the man had acknowledged himself as one with the animals and part of the animal community, stating that “He felt like he was one of the animals. He was part of their community.” Despite their various opinions, what was examined in this study was whether or not the story changed the way they thought about climate change and animal welfare. For the most part, it did when it came to the issue of climate change.

The previous research using Empirical Ecocriticism that was explored in this thesis aided the study especially in the process of forming the two surveys. The methodology Małecki et al. use in their study of reader’s response to animal representation in stories provided great ideas on how the two surveys in this study could be outlined. One of the things they did in their surveys was to ask questions that would help them gain an understanding of the participants’ attitudes towards animals before reading the story. This was something I took into my own study. One key important question that was included in the second survey in this study was to get the participants to write a short summary of the story they had read. This was an idea taken from Małecki et al.’s study. In fact, this ended up to be a vital part of the survey that helped in knowing the validity of the participants’ answers.

This study has shown that the participants were to an extent knowledgeable about the climate crises and their answers in the first survey demonstrated their awareness about the issue. It was also mentioned that representation of nature and its significance to the human species was something that they had been exposed to in a number of literary text taught at the government schools they attended that had standard syllabuses, which meant that the theme of nature was not particularly new to them and therefore probably aided them when being exposed to climate fiction. Understanding the participants from this point of view and gaining an understanding of their cultural and contextual background assisted the study in knowing where the participants stood, in terms of climate opinion, before and after they read the story.

The participant's English language proficiency was also taken into consideration when choosing the story, cultural sensitivities were also kept in mind and the length of the story was manageable for the young adults to read.

After conducting the two surveys, the findings were unexpected. They revealed that although the story had been an animal narrative revolving around the theme of animal extinction and its psychological and emotional effects it may have on human beings, the story managed to spark more of an interest in the way the readers responded to the climate change topic. For some reason, no traces of a change in the way they thought about animal life extinction was found. In respect to animal conservation, the story did not prove to be influential. Some investigation to trace what might have caused this result was made in the analysis. Possible reasons for that were narrowed down to two main reasons, the first being the way the animals had been represented in the story which exemplified a lack of description about the character and nature of the animals, and the second being the parallel effect of the main character/animal and the reader/animal relationship that had proven to have an effect on the distance the audience felt from the animal species. As demonstrated from figures 5 and 6, 30% of the participant stated that reading the story strongly changed the way they had thought about climate change, while only 10% of them stated that it had strongly made a difference as to how they thought about animal welfare. From the analysis, it can be said that the respondents did not perceive the story as one with a strong representation of the animals that would focus their gaze on the theme of animal extinction. This was acknowledged in the way the responses spoke about extinction and its connection to climate change. As previously stated, their concern for climate change rose after they had read the story, but their concern for animals remained relatively the same. Although the story was not set in the distant future, it did allow the readers to reflect upon the possibilities that may occur, not only in the environment surrounding their regions, but in all parts of the world and how ecological

destruction could affect humans, such as the possibility of the occurrence of an imbalance in the food chain. As stated previously, an imbalance in the food chain does not only affect humans, but all species in the circle of life.

As suggested by Fish in his book, the way I addressed my study was by viewing the text and the reader as two separate entities and by also taking into consideration the author's intentions behind the text and the actual result from the participants, which, as mentioned, had not impacted the readers' concern for animals. From the analysis, it can be concluded that the most impactful aspect of the story in helping readers understand climate change was its emphasis on the idea of distance occurring from the isolation of the species and their withdrawal from one another. What was demonstrated from the readers' comments was that this was what helped them overcome the distance they had from thinking about the future of the environmental condition. As mentioned earlier, a respondent commented "With the rise of CO2 level around the world. Humans have mainly focused on ending climate changes thus, us growing apart from animals and focusing on them less."

By engaging with Lydia Millet's "Zoogoing" from an empirical ecocritical perspective, far more could be said about the way in which the story might have an impact on the readers and to what extent it may play a role in forming a sense of environmental agency for the reader. Doing an empirical study of the reception of environmental narratives offers concrete evidence of the quality of the impact climate stories might have on an audience and its potential to form a sense of collective care and concern for animal extinction in the context of the climate crises. By doing so, this study contributes to existing previous scholarly work that has been done regarding the receptiveness of climate fiction. As stated earlier, some scholarly work has shown to lack empirical proof to support its arguments. This study provides empirical proof. In drawing the analysis, this study investigated the four factors of a literary work that Stanley Fish proposes, which was to complete the process of interpreting a

text by taking into account: the author, the text, the social circumstances and the reader's experience, all of which was explored in this study. When outlining the participants' social circumstances, some information about who the participants were and the pupil's socio-economic conditions was taken into consideration. Additionally, an idea of how climate change was advertised in the media and by their government authority bodies and schools was taken into consideration when exploring the participants' experience and knowledge about climate change. It is important to note that both Reader-response theory and Empirical Ecocriticism were useful in drawing conclusions in this study. Although this was an empirical study of people's reactions to a text, Fish's theory on reader-response provided the philosophical perspective on drawing analysis from the way the participants responded. His work provided the ideas and perspective on how to analyze the comments of the respondents in the analysis. This is something that Empirical Ecocriticism as a theory alone was not able to do in this study.

5.1 Limitations of the Study and Recommendations for Future Work on the Topic

What could have made the study more fruitful would have been to give the respondents more of a chance to further explain why they felt that the story had been influential to them or otherwise. Gaining a greater understanding of how the participants would put their reflections into words would have been helpful for the content of this research. The reason the respondents were not encouraged to write more on this topic was to be cautious not to force the young participants to do too much writing as this project was done during their exam period and their timeframe for doing the reading and sending out their responses was limited.

The small number of participants are a limitation of this study; this is very much the case in this study. However, the intention behind this is to regard the assessment as a pilot study. This thesis was a starting point to test protocols, use an online research and data

compiling tool and to also examine the techniques used in order to draw conclusions. The research provided here can also be regarded as preparation for a much larger project that would include far more participants in the future. Given the importance of generating a politically driven force in environmental justice and a collective effort in tackling the ecological crisis in a global scale, the impact of climate literature extends to audiences on an international scale. This is very much worth investigating, and is also something that has not been done in all parts of the world.

Another suggestion to further develop this type of study would be to expand on its scope by doing something similar to what Miranda Iossifidis did in her study. This study, which involved observing online group discussions about several literary texts is a great alternative to using interviews in a study. The texts the participants in her study had chosen were used to explore and discuss several forms of social justice. In her study, she focused on how discussing fiction after reading a piece of literature generated a sense of hopefulness for the group members. Applying this idea to the empirical study in this thesis would allow the space to see how multiple readings of a text could be engaging for the participants. Seeing how discussions about a reading experience of a text can allow space for them to exchange their ideas, and how it can generate a sense of collective concern for either would complement an interview or survey based empirical study. However, this type of study poses another problem. All the members of the study may not get an equal chance to share their ideas. In a case such as this, the reading experience may be regarded as two dimensional. A question to ask in such a research project would be: does reading climate fiction alone generate as much of an impact as discussing it with others after reading it?

Despite its limitations, this study offers a unique insight onto readers' reception of a piece of climate fiction. The originality of the study lay within its ability to provide a non-Eurocentric study with a focus on readers from a non-western part of the world. So far, there

has not been any empirical study previously done on the reception of climate fiction in Bahrain. This type of study would be an important contribution to the field of ecocriticism and would allow scholars to better understand the impact of environmental narratives on different readers, with different cultural backgrounds. What is needed, in such a time of social change and environmental transformation, are further studies which focus on how people in different parts of the world, engage with climate fiction and think about climate change.

Works Cited

- “About: Empirical Ecocriticism.” *Empirical Ecocriticism* |, 7 Apr. 2021, empiricalecocriticism.com/.
- Agosto, Denise E. “Why Storytelling Matters: Unveiling the Literacy Benefits of Storytelling.” *Children & Libraries*, vol. 14, no. 2, 2016, pp. 21-26, <https://doi.org/10.5860/cal.14n2.21>.
- Alber, Jan, and Sven Strasen. “Empirical Literary Studies: An Introduction.” *Anglistik*, Universitätsverlag WINTER GmbH Heidelberg, 1 Jan. 1970, pp. 5 -14 <https://doi.org/10.33675/ANGL/2020/1/3>.
- Albirini, Abdulkafi. “The Role of the Colloquial Varieties in the Acquisition of the Standard Variety: The Case of Arabic Heritage Speakers.” *Foreign Language Annals*, vol. 47, no. 3, 2014, pp. 447–463, <https://doi.org/10.1111/flan.12087>.
- Almiron, Núria. “Greening Animal Defense? Examining Whether Appealing to Climate Change and the Environment Is an Effective Advocacy Strategy to Reduce Oppression of Nonhumans.” *The American Behavioral Scientist (Beverly Hills)*, vol. 63, no. 8, 2019, pp. 1101-1119, <https://doi.org/10.1177/0002764219830466>.
- Al-Saidi, Mohammad, and Elagib, Nadir Ahmed. “Ecological Modernization and Responses for a Low-Carbon Future in the Gulf Cooperation Council Countries.” *Wiley Interdisciplinary Reviews. Climate Change*, vol. 9, no. 4, 2018, pp. 1-12, <https://doi-org.proxy.lnu.se/10.1002/wcc.528>.
- Atalay, Yasemin, et al. “Adoption of Renewable Energy Technologies in Oil-Rich Countries: Explaining Policy Variation in the Gulf Cooperation Council States.” *Renewable Energy*, vol. 85, 2016, pp. 206–214, <https://doi-org.proxy.lnu.se/10.1016/j.renene.2015.06.045Get>.
- Arabic Language G5*, Bahrain Ministry of Education, 2020, pp. 48, [https://www.edunet.bh/e_content/level_1/stage_5/subject_ID_1/Part_1/e_books/Arabic-G5-Reading-2020\(1\)/Arabic%20G5%20Reading%202020/files/assets/basic-html/page-50.html](https://www.edunet.bh/e_content/level_1/stage_5/subject_ID_1/Part_1/e_books/Arabic-G5-Reading-2020(1)/Arabic%20G5%20Reading%202020/files/assets/basic-html/page-50.html).
- Arabic Language G6*, Bahrain Ministry of Education, 2020, pp. 88, [https://www.edunet.bh/e_content/level_1/stage_6/subject_ID_1/Part_1/e_books/Arabic-G6-Reading-2020\(1\)/Arabic%20G6%20Reading%202020/files/assets/basic-html/page-90.html](https://www.edunet.bh/e_content/level_1/stage_6/subject_ID_1/Part_1/e_books/Arabic-G6-Reading-2020(1)/Arabic%20G6%20Reading%202020/files/assets/basic-html/page-90.html)
- “Bahrain.” *Data*, data.worldbank.org/country/BH.
- “Bahrain Ministry of Education.” *Moe.gov.bh*, www.moe.gov.bh/moecontent.aspx.
- Biesta, Gert, and Michael Tedder. “How Is Agency Possible? Towards an Ecological Understanding of Agency-as-Achievement.” *Studies in the Education of Adults*, vol. 39, no. 2, 2007, pp. 132–149., doi:10.1080/02660830.2007.11661545.
- Cassuto, David N. “The CAFO Hothouse: Climate Change, Industrial Agriculture and the Law.” *SSRN*, 24 July 2010, pp. 1-26, papers.ssrn.com/sol3/papers.cfm?abstract_id=1646484.
- Cronon, William. “Storytelling.” *The American Historical Review*, vol. 118, no. 1, 2013, pp. 1–19, <https://doi-org.proxy.lnu.se/10.1093/ahr/118.1.1>.

- Custers, Desiree. "Environmental Protection and the Modern Arabic Novel." *Lagrange Points Brussels*, 20 Nov. 2018, www.lagrangepointsbrussels.com/2018/11/20/environmental-protection-and-the-modern-arabic-novel/.
- Fish, Stanley Eugene. *Is There a Text in This Class? The Authority of Interpretive Communities*. Harvard Univ. Press, 1980.
- Garrard, Gregory. "Problems and Prospects in Ecocritical Pedagogy." *Environmental Education Research*, vol. 16, no. 2, 2010, pp. 233–245, doi: 10.1080/13504621003624704
- Giani, Paolo, et al. "Closing the Gap between Wind Energy Targets and Implementation for Emerging Countries." *Applied Energy*, vol. 269, 2020, p. 1-10, <https://doi-org.proxy.lnu.se/10.1016/j.apenergy.2020.115085>Get rig.
- Gibbs, Raymond W. "Authorial Intentions in Text Understanding." *Discourse Processes*, vol. 32, no. 1, 2001, pp. 73–80, https://doi-org.proxy.lnu.se/10.1207/S15326950DP3201_04.
- "Green Energy Factory." *Solartecc Green Energy*, solarteccgreenenergy.com/.
- Haraway, Donna Jeanne. *Staying with the Trouble: Making Kin in the Chthulucene*. Duke University Press, 2016.
- Haraway, Donna Jeanne. *When Species Meet*. University of Minnesota Press, 2008.
- Henderson, Joan C. "Hosting the 2022 FIFA World Cup: Opportunities and Challenges for Qatar." *The Journal of Sport Tourism*, vol. 19, no. 3-4, 2014, pp. 281–298, doi: 10.1080/14775085.2015.1133316.
- Hussein, Khalid, et al. "Land Use/Land Cover Change along the Eastern Coast of the UAE and Its Impact on Flooding Risk." *Geomatics, Natural Hazards and Risk*, vol. 11, no. 1, 2020, pp. 112–130, doi: 10.1080/19475705.2019.1707718.
- Iossifidis, Miranda Jeanne. "Reading Parable of the Sower Online in a Pandemic: Collectively Imagining Different Futures with Octavia E. Butler's Speculative Fiction." *Literary Geographies*, pp. 156- 164, www.literarygeographies.net/index.php/LitGeogs/article/download/299/pdf_1.
- Jabeen, Fauzia, and Marios I. Katsioloudes. "Just Falafel: A Success Story of an International Expansion." *Emerald Emerging Markets Case Studies*, vol. 3, no. 2, 2013, pp. 1–8., doi:10.1108/eemcs-02-2013-0017.
- Kaplan, E. Ann. *Climate Trauma: Foreseeing the Future in Dystopian Film and Fiction*. Rutgers University Press, 2016.
- Kavaler, Tara. "Veganism in the Arab World." *The Jerusalem Post | JPost.com*, www.jpost.com/middle-east/veganism-in-the-arab-world-589668.
- Kirsten Sandrock. "Border Temporalities, Climate Mobility, and Shakespeare in John Lanchester's *The Wall*." *Journal of Modern Literature*, vol. 43, no. 3, 2020, pp. 163–180, muse.jhu.edu/article/760662.

- Koneswaran, Gowri, and Nierenberg, Danielle. "Global Farm Animal Production and Global Warming: Impacting and Mitigating Climate Change." *Environmental Health Perspectives*, vol. 116, no. 5, 2008, pp. 578–582, doi: 10.1289/ehp.11034.
- Krane, Jim. "Pairing Coal with Solar: The UAE's Fragmented Electricity Policy." *Low Carbon Energy in the Middle East and North Africa*, edited by Robin Mills, Li-Chen Sim, Palgrave Macmillan, Cham, 2021, pp. 57-91.
- Kreishan, Fuad M.M, et al. "Oil Revenue and State Budget Dynamic Relationship: Evidence from Bahrain." *International Journal of Energy Economics and Policy*, vol. 8, no. 6, 2018, pp. 174–179, doi: <https://doi.org/10.32479/ijeeep.6991>
- Małecki, Wojciech, et al. *Human Minds and Animal Stories*. 1st ed., Routledge, 2019.
- Małecki, Wojciech, and Jarosław Woźniak. "Ecocriticism in Poland: Then and Now." *Ecozon@: 2020 Ecocriticism: In Europe and Beyond*, vol. 11, no. 2, 2020, pp. 34–41., doi:10.37536/ecozona.2020.11.2.3553.
- Millet, Lydia. "Lydia Millet on Letting the Work Change You." Interviewed by Jordan Kisner *Literary Hub*, 24 Feb. 2021, lithub.com/lydia-millet-on-letting-the-work-change-you/.
- Millet, Lydia. "Zoogoing." *I'm with the Bears : Short Stories from a Damaged Planet*, edited by Mark Martin, 1st ed., Verso, 2011, pp. 21- 30.
- Meshberger, Frank Lynn, and Tony B. Rich. "Explaining The Hidden Meaning Of Michelangelo's Creation of Adam." *M.I.G. - Microneurosurgical International Group*, www.microneurosurgery-roma.com/explaining-the-hidden-meaning-of-michelangelos-creation-of-adam/.
- Newton, K. M. "Reception Theory and Reader-Response Criticism," *Twentieth-Century Literary Theory*. Palgrave, 1988. Springer Link, pp. 219-240, https://doi.org/10.1007/978-1-349-19486-5_16
- Pino, Maria Chiara, and Mazza, Monica. "The Use of 'Literary Fiction' to Promote Mentalizing Ability." *PloS One*, vol. 11, no. 8, 2016, pp. 1-14, <https://doi.org/10.1371/journal.pone.0160254>.
- Qureshi, Asad Sarwar. "Challenges and Prospects of Using Treated Wastewater to Manage Water Scarcity Crises in the Gulf Cooperation Council (GCC) Countries." *Water (Basel)*, vol. 12, no. 7, 2020, pp. 1-16, doi: 10.3390/w12071971.
- Read, Stephen J., and Lynn C. Miller. "Stories are Fundamental to Meaning and Memory: For Social Creatures, Could it be Otherwise?" *Knowledge and Memory: the Real Story: Advances in Social Cognition, Volume VIII*, edited by Robert S. Wyer, Jr., Psychology Press, 2014, pp. 139-150.
- Ryan, John Charles. "Ecocriticism." *The Year's Work in Critical and Cultural Theory*, Volume 28, Oxford University Press, 2019, Pages 100–122. doi: 10.1093/ywcct/mbz006
- Salma Bani. *Efficient Use of Water for Food Production through Sustainable Crop Management: Kingdom of Bahrain*, Ministry of Municipality and Urban Planning, 2020, pp. 213–218, doi: 10.5004/dwt.2020.25519

- Scharfenort, Nadine. "Urban Development and Social Change in Qatar: The Qatar National Vision 2030 and the 2022 FIFA World Cup." *Journal of Arabian Studies*, vol. 2, no. 2, 2012, pp. 209–230, doi: 10.1080/21534764.2012.736204.
- Schneider-Mayerson, Matthew, et al. "Empirical Ecocriticism: Environmental Texts and Empirical Methods." *Interdisciplinary Studies in Literature and Environment*, vol. 27, no. 2, 2020, pp. 327–336, <https://doi.org/10.1093/isle/isaa022>.
- Schneider-Mayerson, Matthew. "The Influence of Climate Fiction: An Empirical Survey of Readers" *Environmental Humanities*, vol. 10, no. 2, 2018, pp. 473–500, doi:10.1215/22011919-7156848.
- Slovic, Paul, and Slovic, Scott. *Numbers and Nerves Information, Emotion, and Meaning in a World of Data*. Oregon State University Press, 2015.
- Smith, Sophie. "Confronting Environmental Challenges in the GCC: The Initiatives at Play." Egic, www.egic.info/confront-environment-challenges-gcc.
- "Social Support." *Kingdom of Bahrain - EGovernment Portal*, 25 June 2021, www.bahrain.bh/wps/portal/!ut/p/a1/1ZJLU8IwFIX_Ciy6LLI9UIK7yiDK8HBAIGbDN G0IdUJS2gD6701hnNEZsZBdku_knntPEEFLRGR8yHisMyVjUe1JsHqcQuC42B1ib-FBOA16s24fnAG0DRD9BMDz-hXQee68dt0Aw3V6cMc958k3-vEYIMT3s9HLQw9g4NXp3xBBJJE61xsUMa4OuSp0LFZMWiBimWaSN_KYs9KC UiVZLBriPq-YSpnWWpU2A9YyrDNAgfbvkuZTR3q236KAa_NFQ3ot88LK6ztc87k2WvNtE7Af-M4A5d9RMZo56IT88L8xs6HV0SYve92JDRBKKnZh0bLm5IwFbhQ9PTdolBSD3N ECrZmBSta-8Icb7TOyzsLLDgejy2uFBeslaitBX9JNqo0Fn6TKN8uFlvsfdrD_noySQtI8MobDa_AP7HcBE!/dl5/d5/L2dBISEvZ0FBIS9nQSEh/.
- Sommer, Laura Kim, and Christian Andreas Klöckner. "Does Activist Art Have the Capacity to Raise Awareness in Audiences?—A Study on Climate Change Art at the ArtCOP21 Event in Paris." *Psychology of Aesthetics, Creativity, and the Arts*, vol. 15, no. 1, 2021, pp. 60–75., doi:10.1037/aca0000247.
- "The Story of the Palm Tree." *Arabic G4*, [www.edunet.bh/e_content/level_1/stage_4/subject_ID_1/Part_1/e_books/Arabic-G4-2015\(3\)/Arabic G4 2015/files/assets/basic-html/page-63.html#](http://www.edunet.bh/e_content/level_1/stage_4/subject_ID_1/Part_1/e_books/Arabic-G4-2015(3)/Arabic G4 2015/files/assets/basic-html/page-63.html#).
- "The World of Air Transport in 2018." *The World of Air Transport in 2018*, www.icao.int/annual-report-2018/Pages/the-world-of-air-transport-in-2018.aspx.
- "Thirteenth Goal: Climate Action." *Kingdom of Bahrain - EGovernment Portal*, www.bahrain.bh/wps/portal/!ut/p/a1/rZLLbsIwEEV_BRZZBk9inEd3KaK0iEcFpSX ZoDxMkuLYITHQ_n0dUKVWKOVK9cbyzLmjOzNGAVqigIf7PA1lLnjImndgre6n YBmmYw4dvMDgTa3ezO2DMQCiAP8rABj3G8B-tJ9d03LgOj2Y457x0FX68RjAc25no6e7HsAAX9K_oAAFMZelzJBPU7EvRSVDtqJ cg0wUVIPtLo83LZbzTa1BvatlmPMwYrSV0D1loiwoIyqRlK1UhEwxzWXgpm4Z54 mqujYJ6RKiY2LbetfBhh65ONSThESmipuGa372ceZ4F-cwp_zUy4VpHoHfxnUCzvvwlVH7rBNVYf7HzodXrDh_3W4DTy1KcEnfJFr-66aUg5SJ6PhdfY9H2ElRUNE1rWjV2VUqnElZ1jcaaHA4HDqpECmjnVgUGvwky UStLH4nUVksFoWD3_VhFz2Z6EFE2H7ktdsfw8TMdg!/dl5/d5/L2dBISEvZ0FBIS9nQSEh/.

- Ubaid Ali, Muhammad, et al. "Evaluation of Floor-Wise Pollution Status and Deposition Behavior of Potentially Toxic Elements and Nanoparticles in Air Conditioner Dust during Urbanistic Development." *Journal of Hazardous Materials*, vol. 365, 2019, pp. 186–195, <https://doi-org.proxy.lnu.se/10.1016/j.jhazmat.2018.11.005>.
- Weber, Alan S. "Ethics of Food Security Strategies." *International Journal of Agriculture and Food Science Technology*, Volume 4, Number 3, 2013, pp. 181-188, www.ripublication.com/ijafst_spl/ijafstv4n3spl_03.pdf.
- Yılmaz, Recep, and Fatih Mehmet Cigerci. "A Brief History of Storytelling: From Primitive Dance to Digital Narration." *IGI Global*, IGI Global, 1 Jan. 1970, www.igi-global.com/chapter/a-brief-history-of-storytelling/207419.
- Zhou, ZhiYing, et al. "3D Story Cube: an Interactive Tangible User Interface for Storytelling with 3D Graphics and Audio." *Personal and Ubiquitous Computing*, vol. 8, no. 5, 2004, pp. 374–376, <https://doi-org.proxy.lnu.se/10.1007/s00779-004-0300-0>.

2. What animals are currently endangered in your region?
(open ended question)
3. Is the endangerment of animals the result of global warming?
Yes. --- How so? _____
No.
4. Humans are responsible for saving the habitat of animals.

strongly Agree	agree	somewhat agree
strongly disagree	disagree	omewhat disagree
5. Is your country doing anything to sustain the environment?
(open ended question)
6. What is being implemented?
(open ended question)
7. Is your school making any effort to draw attention to climate change and promoting eco-friendly action?
(open ended question)

Part 3 Climate fiction:

1. Have you ever read a climate fiction short story or novel?
 - Yes. ---- Can you name a few? _____
 - No.
2. Have you watched any climate fiction movies?
 - No.
 - Yes. ---- Can you name a few?
 - (Name of movie) Did you like this movie? Why? (open ended question)

Appendix B

Survey 2

In this questionnaire, you will be asked a total of 17 questions. You will be provided with a list of questions as well as statements. Read the statements closely and mark to what degree you agree or disagree with them.

Remember, there are no good or bad answers.

Part 1 The reader's experience

1. Did you like the story? (Yes/No)
2. The story was: _____
Boring partly interesting interesting extremely interesting
other: (open ended)
3. How would you rate the story?
Bad 1 2 3 4 5 Excellent
4. Please summarize the main events of the story in a single paragraph. (Open ended question)
5. What do you think of the main character? ☒ the boxes that apply.
 - ☐ I think he was absurd
 - ☐ He had no reason to go to the zoo
 - ☐ He wanted to get close to the animals
 - ☐ He wanted to understand the animals
 - ☐ He wanted to domesticate the animals
 - ☐ He felt a sense of security with them
 - ☐ He wanted to learn something about the animals
 - ☐ His actions signify the coming of animal extinction
 - ☐ His actions signify the coming of a climate disaster
 - ☐ He was anthropocentric. In other words, he was believed that humans were supreme over all other species
 - ☐ Other: _____
6. What is T mostly concerned about throughout the story? ☒ the boxes that apply.
 - ☐ He wanted to get close to the animals
 - ☐ Animal Extinction
 - ☐ Climate change
 - ☐ Other: _____
7. How do you analyze the following lines from the story?

Remaining would be only the pigeons and the raccoons. But it was not the domino effect he considered most often, simply the state of being last. Loss was common, a loss like his own; he couldn't pretend to the animals' isolation, although he

flattered himself that he could imagine it. One day, he knew, it would be men that were last.
(open ended question)

8. What does our relationship with animals have to do with climate change?
(open ended question)
9. Would you recommend this story to someone else?
Yes ---- Why?
No ----- Why not?

Part 2 Attitudes towards climate change and the environment:

1. What impact does climate change have on animals? ☒ the boxes that apply.
- ☐ It has no impact on animals
 - ☐ Animals are having to migrate to different places
 - ☐ Polar bears are waking from hibernation earlier
 - ☐ Some animals are endangered as a result to climate change
 - ☐ Other: _____
2. I believe that I must take part and contribute to my society's efforts to be more eco-friendly.
- | | | |
|-------------------|----------|-------------------|
| strongly Agree | agree | somewhat agree |
| strongly disagree | disagree | somewhat disagree |
3. Is caring about the environment important?
- | | | |
|----------------------|---------------|----------------------|
| Very Important | important | somewhat important |
| Not important at all | Not important | somewhat unimportant |
4. Do you think it is possible for people to control environmental pollution?
- Yes, I think it is possible.
 - It is possible, but to some extent.
 - It is somewhat possible. Because we can slow down the effects of global warming, but not really stop it from happening. We can control pollution, but not global warming.
 - No, it is impossible.
5. To what extent do you care about wildlife conservation?
- I really care about it
 - I somewhat care about animal conservation
 - I do not care about it at all.
6. How do you relate to animals and other species in the context of climate change?
(open ended question)
7. To what extent do you think the story changes the way you think about climate change?
- | | | | | | |
|-------------------|---|---|---|---|---|
| Very little | 1 | 2 | 3 | 4 | 5 |
| to a great extent | | | | | |

8. To what extent do you think the story changes the way you think about animals?

Very little	1	2	3	4	5
to a great extent					