



Undergraduate Dissertation coversheet & feedback form

PLEASE COMPLETE THE TOP SECTION OF THIS FORM AND SUBMIT ONE COPY WITH YOUR DISSERTATION

For completion by student: IONA MOKANDPURI		
Student Name:		
Student University Email:		
Module code: HPPH5025 INDEPENDENT PROJECT	Student ID number: 1700549	Educational support needs: Yes/No
Dissertation title:		
Supervisor: RH		Word count:
I confirm that this is my original work and that I have adhered to the University policy on plagiarism. Signed		
For completion by the first marker: <i>Comments: This project raises some interesting points; your discussion, for example, of Prebiotic Soup Theory is very interesting, and has implications for issues in areas of philosophy beyond environmental ethics. In places, it would have been good if you could have shown awareness of these wider dimensions of the topic. That said it is clear that you have a good grasp of many of the relevant issues, and you appear to have a relatively perceptive understanding of the topic. This is evinced by, for example, your discussion of the distinction between intended and unintended consequence, and here, reading material could have been incorporated to strengthen your arguments.</i> <i>There is clear signposting, but close attention to the presentation is needed with regard to some claims; claims that could be challenged because of the way you present them. In this regard, just a little more attention to style and wording could really strengthen your arguments.</i> <i>The research question covers a lot of ground, and there is a sense that you are trying to do too much. This results in you covering a lot of areas, all which are relevant, but</i>		

this leaves you with limited scope to deepen your analysis to a great extent. That said, in general, you discuss objections and evaluate their strength throughout your work.

The conclusion is well balanced, plausible, and pragmatic too, and there is quite an extensive bibliography, but it would have been beneficial to have incorporated more philosophical reading material.

67

First Marker's Mark: 67

Date: 15/5/19

Signature: RH

For completion by the second marker (if appropriate):

Comments:

Second Marker's Mark:

Date:

Signature:

NB. All marks are provisional until confirmed by the final examination board.

As inhabitants of this planet, what is our moral responsibility to the environment and how is this reflected in our actions, specifically our food production and consumption, given the knowledge we have of our actions' consequences?

Iona Mokandpuri

1700549

Word Count: 5,499

Introduction

This investigation will examine our responsibility towards the environment and how our actions should reflect this, particularly actions of food production and consumption. This will be done with a series of enquiries into areas that each go partway to address this question. This will include our approach to environmental ethics, exploring anthropocentric, biocentric and ecocentric positions. Environmental issues and ways of overcoming them shall be assessed. The sustainability of modern farming will be discussed, as the consequences of modern farming have implications that affect us all, and arguably that we are all responsible for. From this, the ways in which responsibility is hidden or distanced from us will also be explored. By exploring these areas, I hope to reach a conclusion summarising what responsibility we have to act certain ways based on the environmental impacts of our actions.

The focus will be our actions concerning food production and consumption. Though this will inevitably touch on animal ethics, the focus will be on the results of these actions and their consequences for the environment. These consequences include greenhouse gas emissions caused by intensive farming. From this, the responsibility we have to act in certain ways based on the consequences of our actions and the responsibility that we have to the environment, will hopefully be established.

An aspect of food production and consumption of particular interest is the distance placed between production and consumption, that allows consumers to create a mental division between themselves and the consequences of what they consume. For example, if one rears and slaughters an animal for food, they are completely educated and attached to the process that lead to consumption. They understand the consequences so do not take them for granted, meaning they are likely to consume more sustainably. Contrast this to what we commonly find in today's culture of mass consumerism; one buys processed and packaged meat that is no longer recognisable as the animal from which it was derived. This allows the consumer to take for granted, or not even acknowledge what they are eating, meaning the consequences of its production, however damaging for the environment, are left equally unacknowledged.

Issues of animal ethics and environmental ethics are at heart a single, coherent ethic, particularly regarding questions of moral standing and considerability of beings.¹ For this reason, animal ethics is being qualified as relevant to this investigation; understanding the moral considerability of beings is crucial to addressing the question of our responsibility to the environment. However, beyond this, animal ethics will not be explored in great depth. This is not to belittle the importance of this issue, but to separate the whole ethic and the issues that go with it into parts that are more easily discussed.

One may wonder if this is an issue for philosophy to address as it lies within the boundaries of science, agriculture and politics. However, the problems that exist are problems of moral responsibility and the way in which we choose to live on and engage with this planet from an ethical point of view. Concern for the environment in philosophy should go beyond the status of animals and the intrinsic worth of the Earth and include practical discussion regarding the environment.

¹ Humphreys, Rebekah, *A Critical Examination of the Moral Status of Animals, with Particular Reference to the Practices of Factory Farming and Animal Experimentation* (Unpublished PhD thesis, Cardiff University, 2010), p. 227.

The extent to which animal ethics shall be dealt with in this discussion

There is much to be discussed regarding animal ethics, but that will not be the main focus. Needless to say, topics such as speciesism and exploitation of our fellow animals² is something that needs attention. Here it shall be addressed only in the capacity that the exploitation of animals causes environmental damage. To address this, intensive farming will be used as a crucial issue that causes concern based around both animal welfare and environmental sustainability. Animal ethics is rightly an incredibly publicised issue in today's society. For example, Peter Singer, an influential advocate for animal ethics in the public sphere and his academic field, has written on the subject of animal rights in the context of intensive farming and the ethical problems that this way of farming entails.³ Due to the attention this area already receives, I do not feel it necessary to spotlight animal ethics here, although that is not to say that it should not continue to be a pressing issue. Instead, the focus will be specific to the environmental consequences of human treatment of animals, particularly in examples of intensive farming and the subsequent damage this causes to the ecosystem, biodiversity, and climate. ✓

In "Animal Rights, Human Wrongs"⁴, Regan discusses Singer's speciesism which, though not perfect, goes partway to address the wrongs that humans subject to other species, including intense farming processes. Regan believes Singer's Speciesism is not fully successful in making a case for why we should not raise animals intensely.⁵ Regardless of separate views on animal ethics, the intensive farming of animals is also an environmental case. Farming livestock in this way is objectively unsustainable for this planet.⁶ Environmental sustainability is also an issue of animal ethics, as what beings are morally considerable, and the stakes that animals have in the environment that human actions are affecting is also an environmental issue.⁷ It is relative to these environmental ethics issues that animal ethics shall be considered. Issues including the moral considerability that non-human living beings have will be discussed in relation to biocentric, ecocentric and anthropocentric approaches to ethics.

Modern Farming and the Problems it Poses for Sustainability

To address the responsibility that we have to the environment through our actions, it is necessary to understand the consequences of these actions and the problems that they cause. Modern food production has negative consequences for the environment. As consumers of these products, we are part of the cause, therefore are responsible for the damaging consequences.

² Singer, Peter, 'Ethics and the New Animal Liberation Movement', in *In Defence of Animals*, ed. by Singer, Peter (Oxford: Basil Blackwell Publisher, 1985), pp. 1-10, (p. 6).

³ Singer, Peter, 'Down on the Factory Farm', in *Animal Rights and Human Obligations*, ed. by Singer, Peter and Regan, Tom (London: Prentice Hall International, 1976), pp. 23-32.

⁴ Regan, Tom, 'Animal Rights, Human Wrongs', in *Environmental Philosophy*, 4th ed. ed. by Zimmerman, Michael E., Callicot, J. Baird, Warren, Karen J., Klaver, Irene J., Clark John (New Jersey: Pearson Education, 2005), pp. 39-52.

⁵ Ibid. p.44.

⁶ Ilea, Ramona Cristina, 'Intensive Livestock Farming: Global Trends, Increased Environmental Concerns, and Ethical Solutions', *Journal of Agricultural and Environmental Ethics*, vol. 22. No. 2. (2009), 153-167 (pp.153-154). <<https://link.springer.com/content/pdf/10.1007/s10806-008-9136-3.pdf>> [Accessed 10th Jan 2019].

⁷ Goodpaster, Kenneth E., 'On Being Morally Considerable', in *Environmental Philosophy*, 4th ed. ed. by Zimmerman, Michael E., Callicot, J. Baird, Warren, Karen J., Klaver, Irene J., Clark John (New Jersey: Pearson Education, 2005), pp. 53-66, (p. 53-55).

Livestock production is a significant contributor to greenhouse gas emissions (therefore to climate change), water pollution and loss (which has implications for marine and aquatic life), and soil degradation (caused by deforestation, an issue with many more environmental issues).⁸

Among all methods of farming and food production, the livestock sector generates 18% of all greenhouse gases,⁹ and 14.5% of anthropogenic greenhouse gas emissions.¹⁰ Livestock is also the most significant source of anthropogenic methane, being the cause of 35-40% of these emissions.¹¹ Farming cattle for beef and dairy accounts for the majority of the farming sectors emissions. A report by the Food and Agriculture Organisation of the United Nations (FAO) states beef production to be responsible for 41% of these emissions and dairy production for 20%.¹²

This shows livestock farming is significant when considering environmental concerns, raising questions as to whether we have a responsibility to reduce the amount of livestock we raise, or even eliminate this source of greenhouse gas completely. Livestock covers a third of the planet's surface.¹³ This is a major cause of deforestation (which leads to soil erosion) from grazing animals and the areas of land used to grow feed for livestock. The diet of livestock in intensive farms consists of soy and corn. More than 50% of all corn and at least 80% of all soy grown worldwide is for livestock. This is problematic because the deforestation involved decreases biodiversity.¹⁴ The monoculture caused is also heavily linked to environmental concerns¹⁵ which are exacerbated by pesticides used on these crops.¹⁶

This is also evident in the production of palm oil, which though unconnected to livestock, is an aspect of food production. The widespread production of palm oil has resulted in significant deforestation and through that, a decrease in species richness and biodiversity.¹⁷ The problems of the monoculture and deforestation that intensive palm oil plantations cause are widely publicised and it is not a difficult stretch of the mind to

⁸ the Food and Agriculture Organisation of the United Nations, FAO Newsroom, *Livestock a major threat to environment*, 2006 <<http://www.fao.org/newsroom/en/news/2006/1000448/index.html>> [Accessed 16th Jan 2019]

⁹ Ibid.

¹⁰ Gerber, P.J., Steinfeld, H., Henderson, B., Mottet, A., Opio, C., Dijkman, J., Falcucci, A., Tempio, G., *Tackling climate change through livestock – A global assessment of emissions and mitigation opportunities*. (Rome: the Food and Agriculture Organization of the United Nations, 2013) p. xii. <<http://www.fao.org/3/a-i3437e.pdf>> [Accessed 16th Jan 2019].

¹¹ Ilea, Ramona Cristina, 'Intensive Livestock Farming: Global Trends, Increased Environmental Concerns, and Ethical Solutions', *Journal of Agricultural and Environmental Ethics*, pp.155-156.

¹² Gerber, P.J., et al., *Tackling climate change through livestock – A global assessment of emissions and mitigation opportunities*. p. xii.

¹³ de Haan, C., Steinfeld, H., Blackburn, H., *Livestock and the Environment: Finding a Balance*. (the Food and Agriculture Organization of the United Nations, U.S. Agency for International Development and World Bank). <<http://www.fao.org/docrep/x5303e/x5303e00.htm>> [Accessed 22 Jan 19]

¹⁴ the Food and Agriculture Organisation of the United Nations, FAO Newsroom, 2006.

¹⁵ Ilea, Ramona Cristina, 'Intensive Livestock Farming: Global Trends, Increased Environmental Concerns, and Ethical Solutions', p.160.

¹⁶ Steinfeld, Henning, Gerber, Pierre, Wassenaar, Tom, Castel, Vincent, Rosales, Mauricio, de Haan, Cees, *Livestock's Long Shadow, Environmental Issues and Options*. (Rome: the Food and Agriculture Organisation of the United Nations, 2006). pp. 158-160. <<http://www.fao.org/docrep/010/a0701e/a0701e.pdf>> [Accessed 11th Jan 2019]

¹⁷ Fitzherbert, Emily B., Struebig, Matthew J., Morel, Alexandra, Danielsen, Finn, A. Brühl, Carsten, F. Donald, Paul, Phalan, Ben, 'How will oil palm expansion affect biodiversity?', *Trends in Ecology and Evolution*, 23(10) (2008) 538-545 (pp.538-542). <<https://doi.org/10.1016/j.tree.2008.06.012>> [Accessed 23rd Jan 2019]

see how these same problems are also present with plantations of other crops, even if they receive less publicity than palm oil.¹⁸

These figures demonstrate how land involved in livestock farming causes deforestation, biodiversity losses, increased soil erosion and increases greenhouse gas emissions.¹⁹ Intensive farming has further problems surrounding water pollution and water shortage. Animal waste, pesticides, and fertilisers contribute to water pollution from the global agricultural sector. This has a knock-on effect for aquatic and marine life, and poses health problems for humans.²⁰ In terms of water shortage, the agricultural sector is reportedly the largest user of fresh water.²¹ Raising livestock, particularly in intensive farms, is a substantial contributor to water depletion, reported as being responsible for 70% of freshwater use.²² This is unsurprising when all aspects of the process of rearing an animal to the point it is consumed/produces a product to be consumed and accounted for. Such factors include, crop feed irrigation, washing of animals and carcasses and drinking water.²³

The figures cited here are likely to have increased and will continue to increase, as an ever-growing population means an ever-growing demand. As the steps in mitigating these effects have been small, it would be sensible to expect the figures referring to greenhouse gases and land coverage and use to have increased.

From this brief overview, it is evident that the environmental problems caused by human actions are all too real. Over the course of this study, the problems introduced and evidenced here will be explored further. These problems all raise pertinent ethical questions surrounding the moral considerability of the environment, moral responsibility for actions, and different moral approaches that this issue can be viewed from. Ultimately, it seems clear that the effects on the environment caused by human actions are unsustainable, so cannot continue without serious consequences being felt. ✓

What approach to ethics, and what moral considerations should be placed on the environment and on life?

To ask if something has moral considerability is to ask if that thing should be considered from a moral perspective.²⁴ Why do we attribute things considerability? Is it simply due to an egoist approach, that some argue is at the core of all moral decisions made, or is there a more complex framework to moral values and codes that we owe to the inherent value in certain things? Questions of this nature are of particular interest when examining the moral considerability of the environment and things within it. To properly establish whether we (as a species) have a responsibility to the environment through our actions, it must be ascertained whether the environment has moral considerability and if so, to what extent.

¹⁸ Noor, Faisal, M. Mohd, Gassner. Anja, Terheggen. Anne, Dobie, Philip, 'Beyond Sustainability Criteria and Principles in Palm Oil Production: Addressing Consumer Concerns through Insetting.' *Ecology and Society*, vol. 22. no. 2 (2017). <www.jstor.org/stable/26270132> [Accessed 23rd Jan 2019]

¹⁹ Ilea, Ramona Cristina, 'Intensive Livestock Farming: Global Trends, Increased Environmental Concerns, and Ethical Solutions', p.160.

²⁰ Mateo-Sagasta, Javier, Zadeh, Sara Marjani, Turrall. Hugh, *Water Pollution from Agriculture: a global review*. (Rome: the Food and Agricultural Organisation of the United Nations and the International Water Management Institute, 2017). pp. 1-18. <<http://www.fao.org/3/a-i7754e.pdf>> [Accessed 31st Jan 2019]

²¹ Steinfeld, Henning, et al., *Livestock's Long Shadow, Environmental Issues and Options*, p. 126.

²² Ibid., p.5.

²³ Ibid., pp.128-131.

²⁴ Goodpaster, 'On Being Morally Considerable', pp. 53-55.

Part of establishing this means that the reasons for moral considerability must be established. Deciding on the correct approach to environmental ethics is a key aspect to deciding how much moral value we place on the environment as a whole. For that reason, anthropocentric, ecocentric and biocentric approaches to environmental ethics will be discussed.

The anthropocentric view expresses that human interests are always of more importance than other living beings.²⁵ This often includes the view that only humans have moral value. Such a view is characterised by Immanuel Kant, who expressed the principle that to be morally considerable, one must be a rational human.²⁶ This is objected to and described as too narrow by Warnock,²⁷ and rightly so, as this seems to be a valid criticism. Kant's criterion creates moral outliers: humans who do not have rationality, such as the severely mentally handicapped, and new-born children. Under Kant's criterion these individuals are excluded from having moral value. The solution to this could be to extend the criterion to cover all humans, but this seems arbitrary. Why give one species moral value above all others if there is no particular feature that marks us all out as a species. Doing this seems discriminatory, committing what Singer describes as Speciesism.²⁸

Anthropocentric environmental theories put humans and their interests central to environmental matters. Therefore, environmental campaigns and issues expressed from an anthropocentric standpoint stem from a desire for self-preservation (both individually and as a species). Calls to act in ways that are less damaging to the environment based on an anthropocentric approach, though still yielding good and active responses from people, do not address all the reasons there are for acting this way and certainly does not address the reasons as to why we have a responsibility to do so (beyond self-serving interests). This is not to deny that anthropocentric theories provide good reasoning to change how we act. For example, human actions are collectively leading to a "'Direct existential threat' of climate change..."²⁹ that many warn will lead to the mass extinction of own species if we continue.³⁰ Moreover, the effects are already being felt. Although it is the richest nations who are most responsible for the climate crisis we are facing, the worst effects are already being felt by the poorest nations.³¹ In many cases these effects are approaching what scientists have predicted as worst-case scenarios.³² Here we see that even if the motivations are not of an egoist position, they still stem from concern for human well-being.

There is a strong anthropocentric argument, but this could potentially discredit other environmental arguments and be damaging to the change that they are trying to promote. The argument that the only reason we have to protect the Earth is one of self-preservation can naturally lead to apathy (especially if one becomes disenchanted with

²⁵ Humphreys, *A Critical Examination of the Moral Status of Animals, with Particular Reference to the Practices of Factory Farming and Animal Experimentation*, p. 8.

²⁶ Goodpaster, 'On Being Morally Considerable', p. 57.

²⁷ Ibid.

²⁸ Singer, 'Ethics and the New Animal Liberation Movement', p. 6.

²⁹ United Nations, "'Direct existential threat' of climate change nears point of no return, warns UN chief", *UN News*, 10th September 2018, <<https://news.un.org/en/story/2018/09/1018852>> [Accessed 22nd April 2019].

³⁰ Extinction Rebellion, *The Emergency*, 2019, <<https://rebellion.earth/the-truth/the-emergency/>> [Accessed 23rd April 2019].

³¹ United Nations, 'Millions of Bangladeshi children at risk from climate crisis, warns UNICEF', *UN News*, 4th April 2019, <<https://news.un.org/en/story/2019/04/1036141>> [Accessed 22nd April 2019].

³² United Nations, "'Direct existential threat' of climate change nears point of no return, warns UN chief", *UN News* [video], 10th September 2018 <<https://news.un.org/en/story/2018/09/1018852>> [Accessed 22nd April 2019].

the drive for self-preservation) that if the continuing actions of people do eventually lead to human extinction, life will continue to exist without humans. This prompts the question: why does protecting the environment matter, because life will continue to exist after humans are gone, so would it be better to just let this happen? This conclusion would be erroneous. It fails to consider the suffering and destruction of a large variety of life that is a present problem.

This massive damage that will happen alongside human extinction is a considerable issue. These forms of life are considered to have moral value, just as humans do, and their suffering and destruction is immediate. In answer to those who argue that all environmental action and ethics are born of an anthropocentric position with the intention of ensuring ones' own survival, is the simple fact that suffering is happening to a vast array of living beings now. This suffering of humans and animals, and the prevention of flourishing of plants is considered objectionable.

The prospect of humanity's removal from Earth and the following return of balance in our absence should not be regarded as recompense, or somehow make allowance for the damaging actions of human beings that cause imbalance and damage. The fact that once humans are gone, life will continue to exist and recover from the harm we have caused should not make the wilful disrespecting of something so incredible and unlikely as life more acceptable. Ultimately, this approach to environmental ethics, leaves "a large class of ethically disenfranchised beings..."³³ Here, an anthropocentric approach to environmental ethics leaves many aspects that could be considered relevant and important unaddressed. It is unsurprising therefore, that non-anthropocentric approaches that look further than the good of humanity developed to address those angles that many felt were neglected.³⁴ Sylvan wrote about how there was once not a non-anthropocentric ethic in existence, but that one would come to exist that "...might embrace, both individual plants and animals, on the one hand and environmental collectives or whole species and ecosystems on the other."³⁵

A biocentric approach provides a less exclusive approach to dealing with the environment, and "extends moral consideration to all living things,"³⁶ including sentient and non-sentient beings. This definition covers animals, but goes further, including life forms such as plants and fungi. The inclusion of all organic life to moral considerability³⁷ is certainly a more inclusive approach than that of an anthropocentric theory as it considers all interests that exist. One may question why all organic life is given moral considerability, even if it does not have the capacity to experience suffering or pleasure, which is commonly accepted to be the qualification for sentience. This is a view that Warnock, among others, support.³⁸ Furthermore, it is widely considered that sentience is the qualifying factor for moral considerability, with Singer even going so far as to say that it "is the only defensible boundary of concern for the interest of others."³⁹

³³ Callicott, Baird J., 'Introduction', in *Environmental Philosophy*, 4th ed. ed. by Zimmerman, Michael E., Callicott, J. Baird, Warren, Karen J., Klaver, Irene J., Clark John (New Jersey: Pearson Education, 2005). pp5. - 157, (p.7).

³⁴ Ibid.

³⁵ Ibid.

³⁶ Humphreys, *A Critical Examination of the Moral Status of Animals, with Particular Reference to the Practices of Factory Farming and Animal Experimentation*, p. 12.

³⁷ Ibid., p. 236.

³⁸ Goodpaster, 'On Being Morally Considerable', p. 58.

³⁹ Ibid., p. 59.

However, Goodpaster extends the qualifying factor for moral considerability to "being alive".⁴⁰ This, he describes to be a "plausible and nonbinary criterion...".⁴¹ For Goodpaster, moral considerations are too complex, so cannot be reduced to feeling joy and sorrow, pain and pleasure.⁴² Upon first reading, Goodpaster's point seems overly broad. Why should life forms that do not feel pain be morally considerable? What is it about trees and kelp forests that mean they should be considered morally despite lacking the ability to experience painful or pleasurable sensations? And if these non-feeling beings qualify for moral considerability, then why do non-living beings such as rivers not qualify?

The reply to this is one which, I believe, successfully addresses this problem. Living beings have their own interests. They have an objective state which it is good for them to exist in and that they aim to reach and maintain.⁴³ Crucially, this good is independent, so not only good because it supports something else (such as the good of a river in being full enough to home fish).⁴⁴ It is simply a flourishing which the being strives to achieve.

Of course, a counterargument is that these non-conscious living beings have no desires or feelings, so their interests should not be considered in the same way as those of conscious living beings. However, just because these interests are of a different kind, they should not be excluded as significant.⁴⁵ One can still give moral considerability to such beings, but this introduces the separation of moral considerability, and moral significance. Moral considerability, as has already been discussed, is whether something is allowed moral consideration⁴⁶, besides all the other considerations (financial, practical, etcetera) it is given. Moral significance is less broad than this; it is how much moral consideration is given to one subject rather than another.⁴⁷

A further argument for why life is the accepted criterion for moral considerability is that sensations of pleasure and pain are merely evolutionary derived indicators of what is good or bad for the being. These sensations are a biological tool to maintain, protect and advance their life.⁴⁸ Moreover, because pleasure and pain are just tools utilised by life to maintain itself, it is plausible that evolution could result in a mechanism to do the same job without these sensations, but with an equally sentient being. From this, comes the very reasonable conclusion that pleasure and pain are not the criterion for moral considerability.⁴⁹

The ecocentric approach holds that the ecosystems are good, independent of components within them.⁵⁰ What marks ecocentrism as different from biocentrism is the holistic perspective of the value of life, focusing on the ecosystem rather than individual life forms. The reasoning is that, as life has been established as morally considerable, moral considerability should apply to the entire ecosystem.⁵¹ Under this

⁴⁰ Ibid., p. 54.

⁴¹ Ibid.

⁴² Ibid., p. 55.

⁴³ Humphreys, *A Critical Examination of the Moral Status of Animals, with Particular Reference to the Practices of Factory Farming and Animal Experimentation*, p. 236.

⁴⁴ Ibid.

⁴⁵ Ibid., p. 237.

⁴⁶ Goodpaster, 'On Being Morally Considerable', p. 55.

⁴⁷ Ibid.

⁴⁸ Ibid., p. 59.

⁴⁹ Ibid.

⁵⁰ Attfield, Robin, *Environmental Ethics* 2nd ed. (Cambridge: Polity Press, 2014) p. 225.

⁵¹ Humphreys, *A Critical Examination of the Moral Status of Animals, with Particular Reference to the Practices of Factory Farming and Animal Experimentation*, pp. 244-245.

theory, individuals are not granted intrinsic value as they are in biocentrism. Like biocentrism, ecocentrism also aims for a flourishing of life, however the approach is holistic, so focusses on balance. This position has support from those who accept that life has moral considerability, but that this considerability is only relevant when viewed in the bigger picture of the environment life exists within.

Someone with an ecocentric approach to environmental ethics may not believe that life has intrinsic value in a sacred or spiritual way, but this does not mean that it is without value and that it should not be afforded moral consideration and respect. Although one may believe that there is no intrinsic or spiritual value to life, one cannot deny that life, as a phenomenon to have occurred by chance, is something worth our admiration and respect. Life should be treated with this respect because of how it occurred on Earth. A widely accepted theory explaining how life began on Earth is the Prebiotic Soup theory. Simply put, this theory presents an account of the beginning of life where the synthesis of amino acids occurred under the conditions of the primitive Earth's atmosphere with the addition of an electrical charge (from lightening for example). These amino acids are organic molecules which all life forms are composed from. From this, it is possible for life to evolve over time. This theory is supported by findings from experiments conducted by the chemists Miller and Urey, who recreated the synthesis of amino acids from non-organic material in a mimicked primitive atmosphere with an electrical discharge added to set events in motion.⁵²

By realising that life only exists on Earth through these conditions being just right, and even after that initial life began to exist in its simple form, to now have such variety and abundance in existence, is something that we should consider amazing. The series and events that occurred in order to make life possible could easily have not happened. The fact that they did is something that should be considered incredibly fortunate. Therefore, to squander and destroy the balance of life that we have been afforded, not just on an individual scale, but on an ecological scale, would be disrespectful and a waste of fortune. It is a statistical unlikelihood that life has come about, but this should not detract from how amazing life is considered to be. The fact that life exists in all its varying forms, is amazing and it should be celebrated, precisely because it is so unlikely that it came to exist.

Based on the evidence of the consequences for our actions and the arguments on our moral responsibility to the environment as a species, how should we act concerning our methods of food production?

The evidence of the harmful consequences from human actions towards the ecosystem has been presented. The consequences outlined will only worsen as the human population continues to grow.⁵³ From this, basic reasoning leads us to consider that it is the size of the human population that is the root of why farming has become so damaging to the environment. From this, a pragmatic approach would be to explore ethical ways of controlling population size, making it possible for humanity to live sustainably without upsetting the balance of ecosystems.

Less drastically is decreasing demand for animal products. The farming industry works on a principle of supply and demand, so to cause change, consumers can make informed and moral decisions to change their diet. This could mean switching to a vegetarian or

⁵² Bada, Jeffery L., Lazcano, Antonio, 'Prebiotic Soup- Revisiting the Miller Experiment', *Essays on Science and Society*, vol. 300. no. 5620 (2003). pp. 745-746.

⁵³ Ilea, Ramona Cristina, 'Intensive Livestock Farming: Global Trends, Increased Environmental Concerns, and Ethical Solutions', *Journal of Agricultural and Environmental Ethics*, p. 160.

vegan diet, or simply cutting down certain products, particularly beef and dairy, in everyday life. This is certainly realistic in wealthier countries where there is wider, more affordable, and plentiful alternative foods available. A decrease in the consumption of these products would mean less was needed to be produced. This would directly decrease the greenhouse gas emissions from the industry and go some way to decrease the other environmental problems such as land degradation.⁵⁴

A decrease in demand in order to decrease the environmental impacts need not mean a complete halt to livestock farming. As it is only the sheer amount of livestock produced and use of intensive farming that is the cause of environmental unsustainability, a logical step would be to use smaller scale farms to feed the remaining (though decreased) demand for livestock. The shift away from this more traditional, animal husbandry approach has adversely affected the environment, so a return to these methods would go some way to make amends.⁵⁵

Sustainability is about balance; farming is sustainable if done on a scale that allows its negative effects to be balanced with its benefits. Due to the reduced scale, these negative effects would not present a problem, because it is only on a larger scale that they become problematic and are then considered negative. A parallel can be drawn here to the cutting down of trees. One tree cut down is not problematic for the environment. Although a small amount of carbon dioxide is released, it is at such a scale that it does not disrupt the balance of greenhouse gases in the environment. The biodiversity is relatively unaffected and huge amounts of other habitats are not destroyed in the process. Compare this to deforestation of large swathes of land (such as in cases of clearing land for cattle ranches.⁵⁶ In this situation the carbon dioxide released does cause an imbalance, contributing to the effects of climate change, thus being environmentally unsustainable. There is also a significant impact to biodiversity and the destruction of habitats in this larger scale case.

The importance of individuals' actions are often underplayed in these matters because there are so many individuals on Earth, with actions seeming like a drop in the ocean. However, this mentality fails to consider that the appeal to take responsibility for ones' actions are heeded by the many, as more people are beginning to take responsibility, or at least consider that there's responsibility to be taken. As Robin Attfield explains, real change requires significant, "painful steps"⁵⁷ from individuals, and eventually there will be enough people who want change for policy to be changed by governments. Attfield says there first needs to be moral commitment involving "vanguard actions by significant minorities"⁵⁸ for a wider change in law and social norms to happen. Unfortunately, this kind of behaviour and change in lifestyle is often considered to be above the call of duty, rather than a way of acting that should be expected from everyone who is able (people's financial situation etc. can be a barrier in the lifestyle

⁵⁴ Ibid. pp.162-163.

⁵⁵ Halden, Rolf U., Schwab, Kellogg J., *Environmental Impact of Industrial Farm Animal Production*. (PEW Commission on Industrial Farm Animal Production, 2006) pp. 1-8. <http://www.pcifapia.org/images/212-4_Envlmpact_tc_Final.pdf> [Accessed 22nd Jan 2019].

⁵⁶ the Food and Agriculture Organisation of the United Nations, *FAO Newsroom*, 2006.

⁵⁷ Dower, Nigel, 'Robin Attfield: Changing the Ethical Climate on Climate Change', in *Creation, Environment and Ethics*, ed. by Humphreys, Rebekah, and Vlacos, Sophie (Cambridge: Cambridge Scholars Publishing, 2010), pp. 13-32, (pp. 27-29).

⁵⁸ Ibid.

changes suggested).⁵⁹ This being said, with appropriate changes, one would hope that a sustainable diet will become an affordable one.

Although, while it is true that change from individuals is needed, this should not lift the pressure from organisations, corporations, and governments, because the individuals that make up these groups have equal moral responsibility (if not more due to their position in society), but have the opportunities, resources, and ability to make greater change than the majority of individuals in society. Whether those in these positions will act accordingly is another matter. It is often the case that those with large amounts of power or money act only according to self-serving codes rather than an ecocentric approach.

Drastic cuts to greenhouse gases, a reduction of approximately 80%, is what many argue we should be aiming to achieve. To aim for anything less, Monbion argues, “would be to exceed our entitlement at the expense of others.”⁶⁰ It is selfish, at least towards other humans (especially to those who will be first and more drastically affected by the effects of climate change such as less economically secure groups and those in the global south⁶¹) and from ecocentric and biocentric perspectives, more broadly to other forms of life. To achieve necessary change would require action from governments in the form of policy and law change.⁶²

Our Moral Responsibility under Ecocentrism

The Ecocentric approach is successful in its coherence with our perception of the reality of the natural world. Ecosystems work with the delicate balancing of their different aspects. The number of predators, the amount of prey, the abundance of food at specific times, the ocean temperature, are all examples of the many intricate facets of this balance.⁶³ The full picture is even more intricate. For example, a decrease in the Humpback Whale population results in less nutrients for the phytoplankton which are the very foundation of the ocean’s food chain from which all ocean dwelling creatures are ultimately dependent (not to mention, they produce half the oxygen in the air we breathe).⁶⁴ However, because there is such an intricate balance, changes that seem insignificant can have dramatic effects, acting with a chain reaction of everything’s interconnected nature.⁶⁵ This balance allows for change, and indeed change does happen; after all, the first members of the homo genus were quite different to modern humans which eventually evolved from these.⁶⁶ Change that is gradual allows for adaptation through evolution, so while dynamics change, they do not collapse into mass loss of the biodiversity and life that underpins the ecosystem.

However, human actions are causing change so fast that different species of life are not able to evolve at a quick-enough rate to adapt and survive into the newly created

⁵⁹ Ibid.

⁶⁰ Ibid., p. 15.

⁶¹ United Nations, ‘Millions of Bangladeshi children at risk from climate crisis, warns UNICEF’, 2019.

⁶² Briggs, Helen, ‘Climate change plans require urgent action, government warned’, *BBC News*, 30th June 2015. Available at: <https://www.bbc.co.uk/news/science-environment-33315125> (Accessed 29th April 2019).

⁶³ ‘The High Seas’, *Our Planet*, Netflix, 5th April 2019.

<https://www.netflix.com/watch/80094033?trackId=14170286&tctx=1%2C2%2Cad7b7279-fc87-4b9e-a3b6-2dfa39e12f4f-629307880%2C53a0c6ba-e2ba-438e-8c95-0681c0d63ea8_63983683X3XX1556532084158%2C53a0c6ba-e2ba-438e-8c95-0681c0d63ea8_ROOT>

[Accessed 23rd April 2019].

⁶⁴ Ibid.

⁶⁵ Ibid.

⁶⁶ Tuttle, Russell Howard, ‘Human Evolution’, *Encyclopaedia Britannica*, 2019,

<<https://www.britannica.com/science/human-evolution>> [Accessed 28th April 2019].

conditions.⁶⁷ One could argue that change on this scale is a perfectly natural phenomenon because human actions, though a cause, are not bad. It is argued that because our species is part of the natural world, the change we cause is a natural occurrence, so negative consequences from it are no morally worse than the consequences of an earthquake or a pride of lions catching their prey. In answer to this, it is necessary to emphasise the human ability to know about our actions' consequences. The human ability to be aware of the consequences of our collective actions means that we are aware of the damage that we are causing. It is not difficult to see how awareness of the damage being caused leads to a responsibility to act in a way that is less damaging.

It can be argued that, though these actions have damaging consequences, these are unintended consequences and that this somewhat lessens responsibility. The intended consequences of our use of natural resources are not damaging. They are to feed, clothe, and provide shelter for our species. This is accomplished through the use of natural resources,⁶⁸ for example fishing and agriculture. However, these actions, as well as fulfilling their intended consequences, have unintended consequences. These "can alter ecological processes and have far-reaching and long-term effects that potentially compromise the basic functioning of ecosystems."⁶⁹ Examples of these unintended consequences include loss of biodiversity in the oceans from fishing⁷⁰ and increased greenhouse gas emissions from farming.⁷¹

This process can also be applied to consumers. One may buy a product containing palm oil, for example, because they have a desire for it. The intended consequence from this purchase is that the desire is fulfilled, but the unintended consequences would be the funding of deforestation and greenhouse gas production. Yet these consequences are hidden from their actions through the distance created between consumer and production by the capitalist society that we live in. This distance hides the responsibility.

It seems unjustified to argue that because the consequences are unintended, the perpetrators are exonerated from moral responsibility. There could be a case for this while the consequences remain unknown; ignorance to the damage being caused by one's actions, while not removing the responsibility, may lessen the blame somewhat. However, if someone acts, knowing there will be damaging consequences (even if they are not the *intended consequence*), they are undeniably responsible, and have a further responsibility to change their actions. This being said, this should not lead to people choosing to be wilfully unaware of the effects of their consumer habits. From an ecocentric approach, there is a consumer responsibility to try to overcome ignorance and act proactively in ensuring the actions of one's consequences cause as little damage as possible to the ecosystem, because it is held that the ecosystem is valuable. Moreover, we generally know the truth of our action's consequences, even if they are easily ignored because of the distance created between actions and consequences by global consumer culture.

⁶⁷ 'The High Seas', *Our Planet*, 2019.

⁶⁸ DeFries, Ruth S., Asner, Gregory P., Houghton, Richard A., 'Ecosystems and Land Use Change', (2004), <<http://adsabs.harvard.edu/abs/2004GMS...153.....D>> [Accessed 28th April 2019].

⁶⁹ Ibid.

⁷⁰ 'The High Seas', *Our Planet*, 2019.

⁷¹ the Food and Agriculture Organisation of the United Nations, FAO Newsroom, 2006.

Conclusion

The argument presented by the ecocentric approach gives compelling reason to respect and value life and the balance of the ecosystem, and to act accordingly. However, if one is not convinced by ecocentric, or even biocentric arguments, the arguments from an anthropocentric approach can still be applied to act in a way that is less damaging for the environment (even if the reasons behind it are less morally sound). Acting in a way to prevent ecological breakdown and mass extinction from climate change in order to save one's self or ensure a future for one's children and grandchildren, whilst still having the desired outcome (the prevention of ecological breakdown and so on), encourages a selfish mindset, which is less beneficial to the environment long term, as it does not promote the respectful treatment of the environment as a moral value. Despite this, it cannot be denied that arguments from the anthropocentric approach prove useful in persuading people of the importance of acting in certain ways towards the environment, even if moral considerations are not afforded to the environment and moral responsibility is not accepted. This is particularly useful in persuading governments and organisations to change their actions, as it means acting in a way that protects a future where they can continue to live and pursue their self-serving aims (although these aims are often harmful to the environment, highlighting why the anthropocentric approach should not be central).

Either way, if one is not convinced by an ecocentric, or even a biocentric approach for how we should act towards the environment, the anthropocentric account still provides ample reason for how we should act in practice. Even if people's opinions are divided between the moral reasons for acting, the practical response amounts to the same behaviour towards our environment; to protect it.

Bibliography

Introduction:

- 1) Humphreys, Rebekah, *A Critical Examination of the Moral Status of Animals, with Particular Reference to the Practices of Factory Farming and Animal Experimentation* (Unpublished PhD thesis, Cardiff University, 2010).
<<http://orca.cf.ac.uk/54534/1/U584635.pdf>> [Accessed 18th April 2019].

The extent to which animal ethics shall be dealt with in this discussion:

- 1) Goodpaster, Kenneth E., 'On Being Morally Considerable',
in *Environmental Philosophy*, 4th ed. ed. by Zimmerman, Michael E.,
Callicot, J. Baird, Warren, Karen J., Klaver, Irene J., Clark John
(New Jersey: Pearson Education, 2005).
- 2) Ilea, Ramona Cristina, 'Intensive Livestock Farming: Global Trends, Increased
Environmental Concerns, and Ethical Solutions',
Journal of Agricultural and Environmental Ethics, vol. 22. no. 2. (2009),
pp. 153-167.
<<https://link.springer.com/content/pdf/10.1007/s10806-008-9136-3.pdf>> [Accessed 10th Jan 2019]
- 3) Singer, Peter, 'Down on the Factory Farm',
in *Animal Rights and Human Obligations*, ed. by Singer, Peter and
Regan, Tom (London: Prentice Hall International, 1976), pp. 23-32.
- 4) Singer, Peter, 'Ethics and the New Animal Liberation Movement',
in *In Defence of Animals*, ed. by Singer, Peter
(Oxford: Basil Blackwell Publisher, 1985), pp. 1-10.

Modern Farming and the Problems it Poses for Sustainability:

- 1) de Haan, C., Steinfeld, H., Blackburn, H., *Livestock and the Environment: Finding
a Balance*. (the Food and Agriculture Organization of the United Nations,
U.S. Agency for International Development and World Bank).
<<http://www.fao.org/docrep/x5303e/x5303e00.htm>>
[Accessed 22 Jan 19].
- 2) Fitzherbert, Emily B., Struebig, Matthew J., Morel, Alexandra, Danielsen, Finn, A.
Brühl, Carsten, F. Donald, Paul, Phalan. Ben,
'How will oil palm expansion affect biodiversity?', *Trends in Ecology and
Evolution*, vol. 23, no. 10, (2008) pp. 538-545.
<<https://doi.org/10.1016/j.tree.2008.06.012>> [Accessed 23rd Jan 2019].
- 3) the Food and Agriculture Organisation of the United Nations, FAO Newsroom,
Livestock a major threat to environment, 2006,
<<http://www.fao.org/newsroom/en/news/2006/1000448/index.html>>
[Accessed 16th Jan 2019].
- 4) Gerber, P.J., Steinfeld. H., Henderson, B., Mottet. A., Opio, C., Dijkman., J.,
Falcucci. A., Tempio, G., *Tackling climate change through livestock – A
global assessment of emissions and mitigation opportunities*.

(Rome: the Food and Agriculture Organization of the United Nations, 2013) p. xii. <<http://www.fao.org/3/a-i3437e.pdf>> [Accessed 16th Jan 2019].

- 5) Ilea, Ramona Cristina, 'Intensive Livestock Farming: Global Trends, Increased Environmental Concerns, and Ethical Solutions', *Journal of Agricultural and Environmental Ethics*, vol. 22 no. 2 (2009), pp. 153-167. <<https://link.springer.com/content/pdf/10.1007/s10806-008-9136-3.pdf>> [Accessed 10th Jan 2019].
- 6) Mateo-Sagasta, Javier, Zadeh, Sara Marjani, Turrall, Hugh, *Water Pollution from Agriculture: a global review*. (Rome: the Food and Agricultural Organisation of the United Nations and the International Water Management Institute, 2017). pp. 1-18. <<http://www.fao.org/3/a-i7754e.pdf>> [Accessed 31st Jan 2019].
- 7) Noor, Faisal, M. Mohd, Gassner. Anja, Terheggen. Anne, Dobie, Philip, 'Beyond Sustainability Criteria and Principles in Palm Oil Production: Addressing Consumer Concerns through Insetting.' *Ecology and Society*, vol. 22. no. 2 (2017). <www.istor.org/stable/26270132> [Accessed 23rd Jan 2019].
- 8) Steinfeld, Henning, Gerber, Pierre, Wassenaar, Tom, Castel, Vincent, Rosales, Mauricio, de Haan, Cees, *Livestock's Long Shadow, Environmental Issues and Options*. (Rome: the Food and Agriculture Organisation of the United Nations, 2006). pp. 158-160. <<http://www.fao.org/docrep/010/a0701e/a0701e.pdf>> [Accessed 11th Jan 2019].

What approach to ethics, and what moral considerations should be placed on the environment and on life?

- 1) Attfield, Robin, *Environmental Ethics* 2nd ed. (Cambridge: Polity Press, 2014).
- 2) Bada, Jeffery L., Lazcano, Antonio, 'Prebiotic Soup- -Revisiting the Miller Experiment', *Essays on Science and Society*, vol. 300. no. 5620 (2003). pp. 745-746. <10.1126/science.1085145> [Accessed 18th April 2019].
- 3) Callicott, Baird J., 'Introduction', in *Environmental Philosophy*, 4th ed. ed. by Zimmerman, Michael E., Callicot, J. Baird, Warren, Karen J., Klaver, Irene J., Clark John (New Jersey: Pearson Education, 2005).
- 4) Elliot, Robert, *Environmental Ethics* (Oxford: Oxford University Press, 1995).
- 5) Extinction Rebellion, *The Emergency*, 2019, <<https://rebellion.earth/the-truth/the-emergency/>> [Accessed 23rd April 2019].
- 6) Goodpaster, Kenneth E., 'On Being Morally Considerable', in *Environmental Philosophy*, 4th ed. ed. by Zimmerman, Michael E.,

Callicot, J. Baird, Warren, Karen J., Klaver, Irene J., Clark John (New Jersey: Pearson Education, 2005).

- 7) Humphreys, Rebekah, *A Critical Examination of the Moral Status of Animals, with Particular Reference to the Practices of Factory Farming and Animal Experimentation* (Unpublished PhD thesis, Cardiff University, 2010).
<<http://orca.cf.ac.uk/54534/1/U584635.pdf>> [Accessed 18th April 2019].
- 8) Jenkins, Willis, 'After Lynn White: Religious Ethics And Environmental Problems', *Journal of Religious Ethics*, (2009) pp. 283-309.
<<https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.14679795.2009.00387.x>> [Accessed 24th April 2019].
- 9) Singer, Peter, 'Ethics and the New Animal Liberation Movement', in *In Defence of Animals*, ed. by Singer, Peter (Oxford: Basil Blackwell Publisher, 1985).
- 10) United Nations, 'Direct existential threat' of climate change nears point of no return, warns UN chief', *UN News*, 10th September 2018,
<<https://news.un.org/en/story/2018/09/1018852>> [Accessed 22nd April 2019].
- 11) United Nations, 'Millions of Bangladeshi children at risk from climate crisis, warns UNICEF', *UN News*, 4th April 2019,
<<https://news.un.org/en/story/2019/04/1036141>> [Accessed 22nd April 2019].
- 12) Zimmerman, Michael E., Callicot, J. Baird, Warren, Karen J., Klaver, Irene J., Clark John, *Environmental Philosophy* 4th ed. (New Jersey: Pearson Education, 2005).

Based on the evidence of the consequences for our actions and the arguments on our moral responsibility to the environment as a species, how should we act concerning our methods of food production?

- 1) Ilea, Ramona Cristina, 'Intensive Livestock Farming: Global Trends, Increased Environmental Concerns, and Ethical Solutions', *Journal of Agricultural and Environmental Ethics*, vol. 22 no. 2 (2009), pp. 153-167.
<<https://link.springer.com/content/pdf/10.1007/s10806-008-9136-3.pdf>> [Accessed 10th Jan 2019].
- 2) Halden. Rolf U., Schwab. Kellogg J., *Environmental Impact of Industrial Farm Animal Production*. (PEW Commission on Industrial Farm Animal Production, 2006)
<http://www.pcifapia.org/images/212-4_EnvImpact_tc_Final.pdf> [Accessed 22nd Jan 2019].
- 3) the Food and Agriculture Organisation of the United Nations, FAO Newsroom, *Livestock a major threat to environment*, 2006,
<<http://www.fao.org/newsroom/en/news/2006/1000448/index.html>> [Accessed 16th Jan 2019].

- 4) Dower, Nigel, 'Robin Attfield: Changing the Ethical Climate on Climate Change', in *Creation, Environment and Ethics*, ed. by Humphreys, Rebekah, and Vlacos, Sophie (Cambridge: Cambridge Scholars Publishing, 2010).
- 5) Brigs, Helen, 'Climate change plans require urgent action, government warned', *BBC News*, 30th June 2015. Available at:
<https://www.bbc.co.uk/news/science-environment-33315125>
 (Accessed 29th April 2019).
- 6) United Nations, 'Millions of Bangladeshi children at risk from climate crisis, warns UNICEF', *UN News*, 4th April 2019,
<https://news.un.org/en/story/2019/04/1036141>
 [Accessed 22nd April 2019].

Our Moral Responsibility under Ecocentrism:

- 1) 'The High Seas', *Our Planet*, Netflix, 5th April 2019.
https://www.netflix.com/watch/80094033?trackId=14170286&tctx=1%2C2%2Cad7b7279-fc87-4b9e-a3b6-2dfa39e12f4f-29307880%2C53a0c6ba-e2ba-438e-8c95-0681c0d63ea8_63983683X3XX1556532084158%2C53a0c6ba-e2ba-438e-8c95-0681c0d63ea8_ROOT [Accessed 23rd April 2019].
- 2) Tuttle, Russell Howard, 'Human Evolution', *Encyclopaedia Britannica*, 2019,
<https://www.britannica.com/science/human-evolution>
 [Accessed 28th April 2019].
- 3) DeFries, Ruth S., Asner, Gregory P., Houghton, Richard A., 'Ecosystems and Land Use Change', (2004),
<http://adsabs.harvard.edu/abs/2004GMS...153.....D>
 [Accessed 28th April 2019].
- 4) Fitzherbert, Emily B., Struebig, Matthew J., Morel, Alexandra, Danielsen, Finn, A. Brühl, Carsten, F. Donald, Paul, Phalan. Ben, 'How will oil palm expansion affect biodiversity?', *Trends in Ecology and Evolution*, vol. 23. no. 10. (2008) pp. 538-545.
<https://doi.org/10.1016/j.tree.2008.06.012> [Accessed 23rd Jan 2019].

