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Veganism by law

From individual ethics to policy

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"Let's change the way we eat. Let's change the way we live.
And let's change the way we treat each other" - Shakur (1998).

Contents

1 Introduction.....	1
2 Empirical claims	2
2.1 Animal agriculture and climate change	2
2.1.1 Emissions of animal agriculture	2
2.1.2 Impacts of GHG emissions on present and future generations.....	5
2.2 Evidence of harm towards animals in industrialized agriculture.....	6
3 Moral claims	8
3.1 Preference utilitarian approach.....	8
3.1.1 Interests of present and future generations	10
3.1.2 Interests of animals.....	11
3.1.3 Interests of consumers	13
3.1.4 Interests of farmers.....	14
3.1.5 Analysis	15
3.2 Kantian approach	18
3.2.1 Duties towards present and future generations	21
3.2.2 Animal ethics.....	22
4 From individual ethics to policy	24
4.1 Preference utilitarian political philosophy	24
4.2 Kantian political philosophy	25
4.2.1 Separation thesis	25
4.2.2 Dependence thesis	27
4.3 Policy implications	28
4.3.1 Just transition towards sustainable agriculture	28
4.3.2 Animals rights.....	29
5 Conclusion.....	30
Publication bibliography	32
Declaration of the examination performance	41

1 Introduction

Animal agriculture is responsible for at least 16.5% of global yearly CO_{2e} (carbon dioxide equivalent) emissions (Twine 2021: 3) and thus partially causal for the corresponding climate change, and its disastrous consequences for millions (Romanello et al. 2023: 1-2). At the same time, animal agriculture restricts and damages the bodily autonomy of animals regularly (Hampton et al. 2021: 28) which could be unethical depending on the underlying ethical theory. The policy option of veganism by law is, nevertheless, rarely considered. The definitions of veganism range from an individual ethic of the abstention from consuming animal products to a political philosophy calling for the abolition of animal agriculture (Mancilla 2016: 1-3). Because veganism through the cessation of animal agriculture could be the policy solution to the aforementioned issues concerning the rights of present and future generations affected by climate change and the rights of animals, I explore arguments for and against the implementation of veganism by law.

Although a veganized agriculture would provide 52% of the required emission reductions for the 2°C target of the Paris climate accord (Eisen and Brown 2022: 6), and could allow for greater animal welfare, current policies of many governments promote the opposite. For example, 82% of the subsidies of the European Union's Common Agricultural Policy are routed towards the production of animal products and animal feed (Kortleve et al. 2024: 1-2). Moreover, for American adults the U.S. Department of Agriculture and the U.S. Department of Health and Human Services (2020: 96) promotes the consumption of 720ml of cow milk or other dairy per day and recommends a protein intake through meat and eggs between 652 g and 936 g per week.

In this bachelor thesis I outline the current state of animal agriculture, its emissions and the associated harm towards animals and humans. The empirical findings are dissected ethically with a consequentialist approach and a deontological approach. The ethical analysis concerning the decisions of individuals is then converted into a political philosophy regarding the duties of states towards present and future generations and animals including corresponding policy implications.

The normative argument is mainly based on the example of industrialized animal agriculture, the area where most of the interaction between animals and humans occurs. Nevertheless, other sectors where animals are used for human consumption or entertainment are discussed in less detail, in order to analyze the arguments for veganism by law.

In short, using the recommended political argument structure of Abel et al. (2021: 6) the following hypothesis acts as the basis for the political and philosophical discussion and is revised where necessary:

Moral claims: The state should protect present and future generations and animal rights.

Empirical claims: Animal agriculture is a major contributor to climate change and its corresponding effects and violates the wellbeing of animals regularly.

Conclusion: The state should enforce veganism by law.

2 Empirical claims

The first part of this bachelor thesis outlines the consequences of industrialized animal agriculture namely large CO₂e emissions, climate change and the suffering of animals.

2.1 Animal agriculture and climate change

2.1.1 Emissions of animal agriculture

Even in an optimistic scenario, where fossil fuel combustion in electricity production, transportation and industry is reduced to a minimum and carbon capture and storage (CCS) technologies are used to reduce global emissions even further, Clark et al. (2020: 705) show that the Paris accord's 1.5°C and 2°C targets are in danger solely due to agricultural emissions which amount to one third of global CO₂e emissions. These emissions are produced by several sources: Land use including deforestation emits CO₂ and N₂O (nitrous oxide). Fertilizer production is responsible for CO₂, N₂O and CH₄ (methane) emissions while the digestive processes of "ruminants" (cows, sheep and goats) and rice paddies also emit CH₄. In addition, animal dung causes N₂O and CH₄ emissions. Several processes in the food system also rely on the burning of fossil fuels causing CO₂ emissions (Clark et al. 2020: 705).

According to Clark et al. (2020: 705), global agriculture will emit 1356 Gt CO₂e between the year 2020 and 2100 if its current practices do not change. Even if all other CO₂e emitting sectors of the global economy were hypothetically decarbonized in 2020 food related emissions alone would exceed the limits of the 1.5°C goal of the Paris climate agreement in 2063 at the latest. Even the 2°C goal would be in danger if agricultural practices remain the same as in order to keep a chance of staying below the corresponding 2°C carbon budget, all other sectors would have a remaining budget of under 50 Gt CO₂e, around one year of current emissions. Clearly the agricultural sector will play a significant part in the fight for climate justice and will have to reduce its emissions considerably (Clark et al. 2020: 705). Likely even more heavily than the paper of Clark et al. (2020) suggests as Lamboll et al. (2023: 1360) postulate that the "remaining carbon budget (RCB)" is lower than in longstanding estimates.

Clark et al. (2020: 705-706) plot different scenarios from 2020 until 2100 in order to understand the changes in the food system that are necessary for reaching the 1.5°C or

2°C goals with a high likelihood. For example, a plant rich diet, meaning not a vegan diet but a mainly plant-based one, that is gradually adopted with full adoption in 2050, will reduce emissions to a cumulative 708 Gt CO₂e by 2100. Accordingly, a plant rich diet alone is sufficient for keeping a high likelihood for reaching the 2°C goal, but not enough for the 1.5°C goal as the carbon budget for a 67% chance for 1.5°C is 500 Gt of CO₂e and 1405 Gt CO₂e for a 67% chance for 2°C. In order to reach the 1.5°C goal with a likelihood of 67% several other measures would have to be implemented. The authors suggest that the optimization of yields, waste and efficiency in combination with a plant rich diet would be enough for reaching the 1.5°C goal. In the most optimal scenario, where a plant rich diet and the optimization measures were to be fully adopted by 2050, the global food system would even be net negative in CO₂e emissions as the recovered land would allow for increased carbon sinks (Clark et al. 2020: 705-706).

Indeed, land use is the key for understanding why a vegan diet is powerful in eliminating CO₂e emissions on a large scale. The land that is used for animal agriculture could be used for carbon removal from the atmosphere through the "restoration of native ecosystems". Animals use up more calories of food than they produce, meaning that in a vegan agriculture less land is needed for the provision of the same amount of calories. At the same time a lot of the pastures that are currently reserved for cows and other ruminants could be restored to grasslands and forests. A comparison between the carbon emissions of the current dietary trajectory, versus the emissions of a diet with 70% less meat and a fully vegan diet, reveals that from 2015 until 2050 the current trajectory would produce 86 Gt of CO₂ through land use alone as the world population and demand for animal products increases. The diet with 70% less meat would result in the removal of 332 Gt of CO₂ from the atmosphere through restoration. A global vegan diet would even remove an amount of 547 Gt of CO₂ until 2050. This carbon sequestration would increase the likelihood for reaching the 1.5°C target significantly as the reduced land use and the corresponding negative emissions would allow for more time for other sectors to decarbonize (Hayek et al. 2021: 21-22).

Consequently, Eisen and Brown (2022) take a closer look on the potential emissions reductions and their consequences if animal agriculture were to be eliminated. Their study underscores the findings of the aforementioned articles that have expressed that the decarbonization of the energy and transport sector, combined with a reduction of emissions of the food system through optimization, will not be enough to avert the coming climate catastrophe (Eisen and Brown 2022: 2). A third of the historic emissions of animal agriculture are due to land use change. Other works beforehand did not accurately consider the potential of the land use emissions reductions due to a plant-based transformation. The authors combine the potential of land use emissions reductions with the current

greenhouse gas (GHG) emissions of animal agriculture which are estimated to be 14.5% of yearly global CO₂e atmospheric release (Eisen and Brown 2022: 1-2). This is likely an undercount as Twine (2021: 3) calculates an updated minimum of 16.5% of global GHG emissions at 8.1 Gt CO₂e/year. Nevertheless, a complete elimination of animal agriculture would at least result in the carbon sequestration of around 1350 Gt of CO₂ until 2100. Another more quickly felt effect would be a major reduction of methane (120 Mt/year) and nitrous oxide (7 Mt/year) emissions as these GHGs have a shorter half-life than CO₂ (Eisen and Brown 2022: 2-3).

The authors compare three scenarios from 2020 to 2100: current emission trajectory, versus instant veganization of agriculture, versus a 15-year transitional period towards a completely plant-based agriculture. In their model all other sectors continue to emit their current levels of CO₂e and all land gained due to a more efficient vegan diet is allowed to be restored to native ecosystems. The model does not include the prognosis that the demand for animal products might rise in the future (Eisen and Brown 2022: 3-4). Eisen and Brown's (2022: 4) findings show that even with a 15-year transitional period the advance of global warming would halt between 2030 and 2060, permitting a window where other sectors could decarbonize. In total 1680 Gt of CO₂e would be saved in comparison to the business-as-usual scenario. The projected decrease in GHG emissions would account for 52% of necessary reductions for the 2°C target and 42% of the 1.5°C target. In the other scenario, in which an instant vegan society is plotted, these effects are raised by 14% (Eisen and Brown 2022: 4-8).

The largest part of the total figure stems from the elimination of beef meat and cow milk whose reductions amount to around 1300 Gt of CO₂e. The additional 380 Gt CO₂e could be garnered by a transformation to a completely plant-based diet. This opens up the possibility that a vegan diet might not be necessary looking from a climate viewpoint alone. Elimination of beef meat and cow milk could be sufficient (Eisen and Brown 2022: 7). In light of their findings, Eisen and Brown (2022: 12-13) advocate for the transformation towards a plant-based agriculture, although they do see a lot of sizable social and economic problems that would be associated with the transition. These issues will be part of later chapters in my debate.

The analysis of Eisen and Brown (2022: 12) only includes land-based animal agriculture and while water-based animal agriculture is smaller, it is not negligible as in 2017 aquacultures emitted 263 Mt of CO₂e or around 0.49% of all global GHG emissions mainly due to feed production, logistics and fish cultivation (MacLeod et al. 2020: 1). Additionally fishing fleets emitted a total of 179 Mt of CO₂e in 2011. Emissions of marine fisheries are mainly attributed to the fossil fuel use of ships (Parker et al. 2018: 333).

2.1.2 Impacts of GHG emissions on present and future generations

According to several estimates, the GHG emissions of animal agriculture endanger the possibility of reaching the 1.5°C or 2°C goals of the Paris climate accord (Clark et al. 2020: 705; Hayek et al. 2021: 21-22; Eisen and Brown 2022: 2) which could have catastrophic consequences that I outline exemplarily in the next paragraphs.

The social cost of carbon dioxide (SC-CO₂) is an important indicator in policy making. It expresses the amount of damage that one ton of CO₂ will cause to the global economy. These damages include increased mortality due to higher temperatures, damages to the agricultural sector and damages due to sea level rise, as well as increased energy costs for the cooling of homes and businesses (Rennert et al. 2022: 687-691). Rennert et al. (2022: 690-691) admit that several other factors, like possible future conflicts and migration, are not included. Other damages to sectors that are difficult to quantify, like cultural losses, are also not incorporated. The SC-CO₂ has long been undervalued at 51 US\$ per ton but is updated with recent data and models by the scientists. They show that the metric has a mean of 185 US\$ (Rennert et al. 2022: 689-691). Combining the findings of Eisen and Brown (2022: 4-6) and Rennert et al. (2022: 689) this means that the emissions of animal agriculture will cause estimated economic damages of 310.8 trillion US\$ until 2100.

Another damning indicator is the mortality cost of carbon (MCC) which shows that for the emission of every 4434 tons of CO_{2e} a temperature related excess death will occur between 2020 and 2100. Applied to animal agriculture emissions of 8.1 Gt CO_{2e}/year this means that the industry is the cause of 1.8 million excess deaths per year (Twine 2021: 3; Bressler 2021: 2). Although this number will go down by half if the international community manages to change its current emissions trajectory towards a 2.4°C global warming (Bressler 2021: 4).

Climate change at the present level of 1.14°C warming is already negatively impacting people all over the world as the land area that is disturbed by droughts has increased from 18% of all land in the 1950s to 47% between 2013 and 2022, according to Romanello et al. (2023: 1-2). Heatwave related food insecurity is affecting 127 million more people in contrast to the timespan of 1981 until 2010, and infectious diseases are also spreading more heavily under climate change. The aforementioned economic damages combined with temperature related health issues are threatening to overwhelm the health care systems, especially in regions with a low or medium Human Development Index (HDI). These data points will look even worse in the future as even with a 2°C temperature rise "heat-related deaths" will rise by 370%, and 525 million more people will lose access to secure food provisioning between 2041 and 2060. The spread of dengue fever will inflate by 36-37% in 2050. The authors add that their projections are cautious as tipping points could

increase the health risks considerably. Another risk for many people are the rising sea levels which may cause the displacement of 153.8 million people who reside in areas less than one meter above the sea level (Romanello et al. 2023: 1-2, 22).

As an example, I want to focus on one of the climate tipping points: The Atlantic meridional overturning circulation (AMOC), of which the gulf stream is a part of, is weakened due to freshwater induction, for example, from ice sheet melting (van Westen et al. 2024: 1). The AMOC is currently on its way to tipping van Westen et al. (2024: 7) model in their analysis of an "early warning" AMOC tipping indicator. Staying on the current emissions path would lead to the collapse of the AMOC between 2025 and 2095, with a mean estimate of the tipping time of the AMOC in 2050. Greenhouse gas emissions need to be heavily reduced in order to prevent the weakening of AMOC which would collapse due to added freshwater input into the North Atlantic system which is caused by temperature increases (Ditlevsen and Ditlevsen 2023: 1-2, 6-8).

Ritchie et al. (2020: 76) plot the impacts of a sudden AMOC collapse on the agriculture of Great Britain. A cessation of the circulation would cool down Great Britain by 3.4°C while at the same time provide less rain. The area of Great Britain that is suitable for agriculture would decrease from 32% to 7% due to the drying effect. Consequently, this results in less agricultural production and economic damages of 346 million pounds per year at current prices which would likely go up after an AMOC collapse (Ritchie et al. 2020: 76-79).

The climate catastrophe is affecting mental health as well. Suicide rates correlate with temperature as 1% more suicides arise per 1°C above usual temperatures. Hospital admittances linked to mental health problems rise during heatwaves. At the same time occurrences of "post-traumatic stress disorder (PTSD), depression, anxiety, extreme psychological stress and distress, substance use and suicidality" increase as a consequence of extreme weather and climate events like flooding, storms and wildfires and their aftermath (Lawrance et al. 2022: 451-454).

A lot more empirical evidence could be supplied, but the picture is clear: Animal agriculture is a major emitter of GHGs and in turn endangers the livelihood of present and future generations.

2.2 Evidence of harm towards animals in industrialized agriculture

Once again, it is impossible to provide an exhaustive list of all harm that is done to animals in industrialized animal agriculture as all parts of it negatively impact the welfare of animals (Hampton et al. 2021: 28). Several examples are provided as the basis for the following ethical discussion.

Pregnant pigs are confined to small stalls with an area of 1.26 m² which results in increased leg and feet injuries, abrasions and a worse immune system in comparison with pregnant pigs with more space of 2.3 m² (Karlen et al. 2007: 89, 98-99). Egg producing chickens have a need for scratching the floor (foraging) but cannot adequately do so when they are kept in small cages (Weeks and Nicol 2006: 302). In order to boost milk production cows and their calves are removed from each other on day one after birth which results in them calling for each other and in decreased social adaptability of the calf (Flower and Weary 2001: 276, 281-283). The removal of horns of cattle through disbudding or dehorning is a regular livestock management method. Cattle without horns produce less injuries and need less space. Disbudding and dehorning are very painful as the cattle's behavior afterwards shows. Cortisol levels which are associated with stress are also elevated during and after the procedures while anesthesia lowers the intensity of these effects (Stafford and Mellor 2011: 226-229).

The transportation of animals to markets and slaughterhouses poses welfare challenges. Animals like cows and sheep show nervous behavior and high cortisol levels during loading into vehicles. Health concerns arise during the transports which take one to two days as the animals are not given food or water during their journey and usually stand for the whole time. Hypothermia and heat stress are also issues in animal transportation as well as contusions due to crowding (Fisher et al. 2009: 158-161). During transportation of animals via ships or planes, they are subjected to similar conditions and increased mortality rates (Phillips and Santurtun 2013: 313; Collins et al. 2020: 198).

In 2021 roughly 73.7 billion chickens, 1.4 billion pigs and 329 million cows and many other animals were slaughtered (Roser 2023: 1). Animals that are slaughtered without being unconscious, for example for halal meat, are cut at the carotid arteries. Due to so called false aneurysms which cause a halt in blood flow from the arteries the process of dying is oftentimes prolonged. Before their slaughter most animals are stunned with an electrical current which is painful and at the same not always successful. Rendering animals unconscious with a captive bolt is not always successful as well. Captive bolts work by inflicting brain damage through a large percussive force to the forehead and had a failure rate in 2003 of 1.4% (Gregory 2008: 3-7).

Fish have pain receptors and have a nervous system that is capable of reacting to pain although it is unclear how close their ability is to the ability of a mammal feeling pain. Farmed aquaculture fish are negatively affected in a variety of ways. Through (in-)breeding aquaculture fish have acquired genetic defects that result in less stress resistance and higher death rates. Due to their confinement in aquaculture the fish suffer from overcrowding and subsequently from "diseases, aggressive behavior causing injuries or food deprivation, poor water quality" which in turn cause higher stress and death rates. The

butchering of the fish usually starts with a method of ensuring unconsciousness. Many of these methods are very stressful and painful and include among others suffocation, electrocution and hitting the fish (Bergqvist and Gunnarsson 2013: 77-79, 84-87).

As shown, animals are regularly subjected to harmful behavior during their upbringing, transport and slaughter. The two empirical claims seem to stand according to the available literature.

3 Moral claims

After having presented the issues connected with industrialized agriculture, the moral part of the question has to be answered. Two applied ethics approaches, namely a consequentialist approach by Singer (2011) and a deontological approach by Kant (1911), are the basis for the answer whether one owes any consideration towards the people of future generations who are harmed due to the GHG emissions of animal agriculture and towards animals who are harmed directly through the production methods of animal agriculture.

Consequentialism and deontology are the most exclusively accepted normative ethical theories among scientists in normative ethics and applied ethics. Virtue ethics come in third and represent another interesting research avenue (Bourget and Chalmers 2020: 1). I chose the ethical theories of preference utilitarianism by Singer (2011) and the deontological ethical theory by Kant (1911) because they represent two epochs with differing views on animal ethics allowing for a comprehensive political and ethical comparison, resulting in a nuanced analysis with corresponding diverse policy implications. Nevertheless, other consequentialists and deontologists should be looked at in works of larger scope in order to find a more universal answer.

3.1 Preference utilitarian approach

The ethical theory of Singer (2011: 2-3) is based on consequentialism, the notion that the morality of actions should be judged through their consequences. His ethics belong to a subcategory of consequentialism namely utilitarianism which considers an action to be ethical if it generates more happiness than any other alternative action. Happiness in this case is "net happiness" meaning the happiness that is generated through an action minus the pain or suffering that is caused by it. The author rejects ethical theories that are based on rules, on religion, on naturality or any other subjective or relativist principles meaning that his ethics are not dependent on the time or the society one lives in (Singer 2011: 2-8). Consequently Singer (2011: 8-9) says that the basis for his theory is rational thought and not one's own subjective needs or judgements. Thus, he is proposing a "universal" theory of ethics, a theory that is independent of the actor that wants to make an ethical decision. His theory is supposed to be capable of being applied similarly by any potential judge (Singer 2011: 10-11).

From this condition of universality, the author derives that a utilitarian theory satisfies the condition because the interests of those affected by an action are valued similarly through the net happiness account. One's own needs and preferences are worth the same as any other person's preferences. This focus on preferences is called preference utilitarianism which differs from classical utilitarianism. Classical utilitarianism employs pleasure as the measure for ethical consequences while preference utilitarianism looks at whether the preferences of those that are affected by an action are promoted (Singer 2011: 11-13). The example of a person that is collecting food for their tribe is provided by Singer (2011: 12). The person encounters a tree rich in fruits, but the person has no ethical knowledge or guidelines on how to proceed. In this case one's own preferences could be at the forefront, and eating as much fruit as possible before sharing the fruits with one's peers could be the sensible course of action. But if one wants to reflect on the situation ethically, the person has to take into account the preferences of his peers. They are likely as hungry as oneself, and their preferences should not be less worthy of consideration from a universal standpoint (Singer 2011: 12).

In order to reflect on the interests of people that are affected by an action equally without looking at arbitrary characteristics like origin, intelligence, sex, gender or race, Singer (2011: 20) proposes the "principle of equal consideration of interests". The principle mandates that an "equal weight" is awarded to the interests of all those that are affected by an action. If an action violates the interests of one person more than the interests of another the action is unethical and should not be pursued. The explanatory example that is provided looks at pain relief. Two persons are in pain. The one that is in more pain has a higher interest in being relieved of its pain. One should not incorporate other factors into the decision, for example, how close one is to one of the persons or how esteemed their job may be. Thus, the weighing of the interests is supposed to be unprejudiced. A large interest or several light interests combined outweigh even smaller interests without looking at the persons involved (Singer 2011: 20-21).

The only characteristic that is necessary, is being capable of having interests. This does not mean that one has to award everyone the same treatment. As interests vary widely, it is important to take all of them into account and weigh them impartially which can lead to unequal treatment. Unequal treatment is ethical if all interests are considered (Singer 2011: 21). The following example by Singer (2011: 22) underscores his argument: Two people are hurt after an earthquake. One has a severe injury resulting in significant pain while another is lightly injured with small pain. A third person has two opiate pain relievers. On the one hand, equal treatment would command that both of the injured receive one pain reliever. The principle of equal consideration of interests on the other hand would demand a weighing of interests of the third person. As the severely injured person has a

much higher interest in pain relief than the lightly injured one it is ethically necessary to give both pain relievers to the severely injured person (Singer 2011: 22).

The following paragraphs outline a preference utilitarian view on whether it is ethically permissible to consume animal products. As the principle of equal consideration of interests is foundational to preference utilitarianism (Singer 2011: 20) I present the interests of all parties that are affected by the consumption of animal products. This includes the interests of present and future generations, the interests of animals and the interests of consumers and farmers of animal products. The subsequent analysis weighs those interests against each other according to preference utilitarianism.

3.1.1 Interests of present and future generations

The fundamental human interests encompass preventing painful experiences, secure food and housing access, forming relationships with other persons and the ability to "pursue one's projects without interference". Additionally, humans have an interest in living and not being killed because of their capability to plan ahead and thus have preferences for their future. Indeed, being killed disregards "the most central and significant preferences a being can have", according to Singer (2011: 28, 80).

Consequently, humans of present and future generations have an interest in lower CO_{2e} emissions. As presented in part "2.1 Animal agriculture and climate change", animal agriculture is a major carbon emitter (Twine 2021: 3) and therefore responsible for the impacts of its greenhouse gas emissions. Those impacts violate the interests of present and future generations through among others heat deaths, economic damages, droughts and diseases (Rennert et al. 2022: 687-688; Bressler 2021: 2; Romanello et al. 2023: 1-2).

However, there remains the issue of the non-identity problem. Parfit (1984: 378) brings forth that as a result of our actions and policies different future people will exist in comparison to a world where we continue as is. As such, we cannot take the interests of future people into account because we do not know whose interests to represent (Parfit 1984: 378). There are several responses to the non-identity problem with differing degrees of the necessity to consider future people's interests (Abel et al. 2021: 194-195). Whether one recognizes the interests of future generations is not sufficiently relevant to my argument as the interests of presently living individuals are already violated by the impacts of climate change and will continue to be violated in the future (Bell 2011: 104). This means that the interests of present generations and thus indirectly the one's of future generations need to be acknowledged regardless of one's answer to the non-identity problem.

3.1.2 Interests of animals

According to Singer (2011: 48) the principle of equal consideration of interests should not only be applied to human beings but also to most animals. Although animals are commonly not included in our ethical considerations, he argues that the interests of animals need to be considered similarly to ours. This illation is directly derived from the principle of equal consideration of interests. If a person does not include the interests of animals in not feeling pain into their ethical analysis, the person is a speciesist analogously to, for example, racists or sexists who downplay the importance of interests of certain subsets of people due to unreasonable attributes. Any being that has the ability to feel pain or pleasure needs to be incorporated into the equal consideration as it is the basic requirement for having interests. Because many animals have the ability to feel pain it is necessary to include them in ethical arguments (Singer 2011: 49-51).

The ability to feel and anticipate suffering differs between species which makes it necessary to carefully consider the interests of different species. Singer (2011: 51-52) provides the example of a human suffering from cancer and a laboratory mouse. The human due to its capacity to reflect on the coming pain and death might suffer more than the mouse. A wild animal that is captured for tagging might suffer more than a person that is arrested because the animal cannot understand that its fate is only temporary. These differences in capacities must be included into the equal consideration of interests. However, these differing capacities do not allow for the negation of the interests of "nonhuman animals" (Singer 2011: 51-52).

As discussed in chapter "2.2 Evidence of harm towards animals in industrialized agriculture", animals are regularly subjected to painful experiences through for example inadequate space, dehorning and during transport and slaughter. Evidence of pain responses can be found through cortisol levels and anesthesia application especially in vertebrates (Karlen et al. 2021: 98-99; Stafford and Mellor 2011: 226-229; Fisher et al. 2009: 158-159; Phillips and Santurtun 2013: 313; Collins et al. 2020: 198; Gregory 2008: 6-7; Barr et al. 2008: 745). These practices violate the interest of animals in wanting to avoid pain.

The principle of equal consideration of interests cannot be extended to beings that are not capable of having interests. If some animals do not feel pain, they do not need to be considered ethically (Singer 2011: 50). As shown beforehand, fish experience pain (Bergqvist and Gunnarsson 2013: 77-78). In experiments decapod crustaceans react to painful stimuli and anesthetics. It is likely that crustaceans are able to experience pain (Barr et al. 2008: 747-750). After painful stimuli hermit crabs display behavior that was not only reflex behavior. The crabs were able to make decisions including "trade-offs" between different stimuli (Elwood and Appel 2009: 1245). Gibbons et al. (2022: 158-159) use eight benchmarks of pain responses in order to test whether insects are able to

experience pain. "Strong evidence" for the capacity to suffer from pain is found regarding flies and mosquitoes, as well as "substantial evidence" regarding bees, wasps and ants (Gibbons et al. 2022: 209). This evidence shows that the animals that may ethically be disregarded because they lack the capability to experience pain are very few and certainly none that are commonly consumed in today's agriculture (Singer 2011: 59-60).

The interests of animals could be violated less severely in areas with more humane treatment. Regarding, for example, organic agriculture Singer (2011: 55) nevertheless argues that organic agriculture incorporates practices that are very harmful to animals, for example, the separation of cows and their calves (Flower and Weary 2001: 276), as well as the killing of animals which could be unethical as I will discuss later.

The interests of animals need to be considered in other sectors as well. An estimated 192 million animals were supplied worldwide for animal experimentation in 2015 (Taylor and Alvarez 2019: 210). In 2020 in the European Union animals were subjected to 8 million treatments for scientific purposes. Of those treatments 4% were classified as "non-recovery" (anesthetized and killed), 10% as "severe" (intense or continuous "pain, suffering or distress") and 37% as moderate (medium "pain, suffering or distress") (European Commission 2023: 21-22, 34). It is in the interests of the animals that are experimented on to avoid this kind of pain and suffering.

The argument that animals have an interest in not being killed is more difficult to prove because many animals lack the capacity for foresight. As those animals cannot plan for the future they do not have preferences for their future life meaning that a painless killing could be ethical (Singer 2011: 80). Painless killing is a challenge in itself as, for example, during the butchering of cattle a failure rate of the first shot of 1.4% was observed (Gregory 2008: 3). Singer (2011: 104) suggests a spectrum where a higher capacity for forethought leads to a more valuable interest in staying alive.

There are varying degrees of evidence for future oriented thoughts in animals. Pigs, for example, consider their past experience of competition for food by anticipating and changing their behavior accordingly in order to maximize their food intake (Held et al. 2002: 164-165). Another case of future oriented thought is that of a chimpanzee in a zoo that gathers and breaks off stones while the zoo is closed. His stashed stones are later used as projectiles against zoo visitors (Osvath 2009: 191). In another experiment scrub jays, a kind of bird, are studied. Correia et al. (2007: 859) show that scrub jays are able to anticipate different kinds of feed alternations and store their preferred feed option. The researchers say that the birds are able to predict that their future food preference will be different from their current food preference (Correia et al. 2007: 859). All these examples

show that there are interests of animals that have the capacity for forethought that need be taken into account in the equal consideration of interests (Singer 2011: 104).

However, there is a subset of animals that does not possess the ability for future oriented thoughts and preferences. An indirect interest in not killing them can be derived: The killing of an animal can cause suffering in their peers (Singer 2011: 105). Singer (2011: 111-112) argues that according to preference utilitarianism a being without future oriented thoughts may be killed without violating its preferences if the killing is done "instantly and painlessly".

3.1.3 Interests of consumers

Consumers of animal products that live in modern societies where the access to fruits and vegetables is plentiful do not have an existential interest in consuming animal products. Their interest in consuming animal products stems from luxury rather than necessity (Singer 2011: 54). The interest in the enjoyment of eating animal products would be violated by a mandatory vegan lifestyle. However, the pleasure generated from eating vegan food does not drop to zero. Rather there is a difference between the enjoyment of vegan food by an avid meat eater and a convinced vegan (Abel et al. 2021: 179-180). A survey among German organic food consumers shows that vegans assess the taste of plant-based food more favorable than omnivores. On a 7-point scale from tasteless to tasty, vegans judged vegan food with a mean of 5.83 while omnivores awarded the mean value of 3.49 (Kilian and Hamm 2021: 8). This difference in enjoyment constitutes the interest of omnivores in not adhering to a vegan diet.

A study from Serbia shows that some omnivores associate a vegan diet with poor health (Branković and Budžak 2024: 95-96). As such, consumers of animal products could have an interest against a vegan lifestyle through their interest in a long and healthy life. But an umbrella review by Capodici et al. (2024: 16) on health-related impacts of plant-based diets reveals that plant-based diets are associated with a decreased "risk of ischemic heart disease, gastrointestinal and prostate cancer, as well as related mortality". Even among the oftentimes shunned "ultra-processed foods", plant-based processed foods exhibit no correlation with increased multimorbidity in contrast with animal-based processed products which are associated with several diseases according to Cordova et al. (2023: 9). It is important to add that a scoping review shows the necessity of vitamin B₁₂ supplementation for vegans as vitamin B₁₂ availability is low in vegan food sources (Fernandes et al. 2024: 16). Similarly potential micronutrient deficiencies of vitamin B₂, D, niacin, iodine, iron and calcium need to be counteracted if necessary (Bakaloudi et al. 2021: 3519). Contrary to misconceptions, consumers have an interest in a vegan diet because of its positive health impacts as long as adequate micronutrient supplementation is guaranteed.

A special health interest should be awarded to pregnant people during pregnancy and breastfeeding as nutrient deficiencies during pregnancy and afterwards pose severe health risks for the pregnant person and their child including neural tube defects, stunted fetal growth and anemia (Sebastiani et al. 2019: 4). A review of the current evidence by Sebastiani et al. (2019: 20-21) shows that these risks can be mitigated fully if the pregnant person is advised on nutrition and observed carefully by knowledgeable health actors. On a similar note, Kayode et al. (2022: 45) advise that children's vegan nutrient intake needs to be watched carefully and corresponding supplementation is necessary in order to prevent health complications. As shown, pregnant people and children have an interest against veganism due to health reasons if their health care system cannot adequately support their diet.

There exists another special interest of those consumers of animal products that are existentially dependent on animal products. For example, some communities in Mexico practice subsistence hunting. Those communities have an interest in not starving if veganism were to be demanded of them (Singer 2011: 54; Briceño-Méndez et al. 2021: 4-5).

3.1.4 Interests of farmers

More than a billion people are dependent on animal agriculture for their livelihoods in different degrees. A shift to a vegan agriculture affects the interests of farmers in agriculture in different ways (Eisen and Brown 2022: 12-13).

On the one hand, a vegan agriculture could negatively impact the businesses of farmers and consequently their workers. Newton and Blaustein-Rejto (2021: 7) interviewed US American farmers on possible impacts on their agricultural livelihood in response to the emergence of plant-based meat sources. Crop-growing farmers feared the expenses that are tied to the transition from feed crops to crops that are more in demand for humans. Those farmers also noted that because plant-based agriculture is more space efficient that they might lose revenue. Chicken and pig farmers are also concerned about the threats to their livelihoods because they cannot easily transition away from animal agriculture. Some of the interviewees also envisioned positive impacts, for example, less air and water pollution around their communities and the potential of double cropping with legumes which enhances revenue opportunities (Newton and Blaustein-Rejto 2021: 4-7).

On the other hand, climate change is negatively impacting the businesses of farmers in animal agriculture as well. The production of animal feed is impaired through water shortages and heat which also cause problems during raising of livestock. Meteorological disasters will also impact transport infrastructure and agriculture in general (Godde et al. 2021: 4). This means that farmers and their workers have some interests in sustainable animal

agriculture. At the same time, they have an interest in continuing the production of animal products for their livelihood.

3.1.5 Analysis

The following preference utilitarian analysis, of whether one can ethically consume animal products or not, is guided by the principle of equal consideration of interests by Singer (2011: 20) which mandates the consideration and weighing of every interest that is touched upon by an action. Those include the interests of present and future generations in a good and long life, the interest of animals in a long life without pain, the interest of consumers in pleasuring and healthy food and the interest of farmers in their livelihood. Special interests, for example, of children are considered at the end of the analysis.

Even excluding the interests of animals, it is generally unethical to consume animal products in currently common amounts because of the heavy weight one has to assign to the interests of the people of present and future generations whose lives will be impacted negatively in a substantive way if the current consumption of animal products is not restricted (Clark et al. 2020: 705; Romanello et al. 2023: 2). Farmers and their workers that are dependent on animal agriculture have an interest in curbing the effects of climate change as well because it threatens their livelihoods (Godde et al. 2021: 4). The interests of present and future generations and their own interest in fighting climate change negates their interest in continuing with animal agriculture in an unrestricted way. A sustainable animal agriculture would allow them to stay in business, albeit under severe transition challenges (Herrero et al. 2009: 118-119). The carbon budget that will be available to animal agriculture is heavily dependent on other sectors and on the amount of natural carbon sequestration (Lamboll et al. 2023: 1361). This means, excluding the interests of animals, one could ethically consume animal products but only if they were sustainably sourced. The pool of sustainable animal products will likely be very small because of the large amount of CO_{2e} emissions of animal agriculture that are not due to fossil fuel use but due to land use and the digestive processes of ruminants both of which cannot be easily decarbonized (Clark et al. 2020: 705).

One could argue that this argument is more political than ethical because of our negligible individual carbon footprint which is not causing a direct impact on someone's life. Singer (2011: 235) is of the opinion that our footprint nevertheless contributes to climate change and its consequences which violates the interests of millions. Regarding such "collective action problems", Kagan (2011: 114-115) supports the account of Singer by saying that even small "imperceptible" consequences harm others in tiny amounts. Through our small emission causing actions we are raising the likelihood that more animals are reared and slaughtered because we created bits of demand for it (Kagan 2011: 124). In preference utilitarian terms the argument goes as follows: We should not contribute even tiny

amounts to a higher likelihood that an interest is violated unless other interests outweigh it. Through buying animal products we are ever so slightly raising the chances of violating the interests of present and future generations. Only if we are sure that there is enough CO_{2e} left in the carbon budget, we could ethically consume animal products if the interests of animals were to be excluded.

For the sake of argument, I excluded the interests of animals in order to later compare the climate change argument with the deontological approach. The interests of animals should not be excluded from an ethical consideration as this would constitute speciesism, the arbitrary discrimination based on species, according to Singer (2011: 50-51). If one fairly considers the interests of animals to be free from suffering, one has to come to the conclusion that a vegan diet is ethically mandatory because the interests of animals outweigh the interest of humans in a pleasurable meal (Singer 2011: 56). As discussed in part "3.1.3 Interests of consumers", only a marginal amount of pleasure is lost after a shift to a vegan diet. Consumers even have an opposing interest in not consuming animal products as animal products are the cause of cardiovascular diseases and some types of cancer (Capodici et al. 2024: 16).

There is an exception to this argument if an animal is raised with the inclusion of a fair consideration of its interests. If it does not suffer during its raising, its products like milk could be ethically consumed. However, it cannot be ethically killed for its meat or hide, as I will show in the next paragraphs. Singer (2011: 56) considers it unlikely that those kinds of animal farming practices exist right now in industrialized animal agriculture which is why he advocates for a nearly vegan diet in industrialized societies.

Singer (2011: 119-120) reasons that it is ethically wrong to kill beings that have the capacity for future oriented interests which includes humans, many mammals and likely fish and birds. As the evidence points to a broader understanding of consciousness he suggests that one should err on the side of caution as long as there is evidence for future preferences in those animals. Some animals that lack the ability to plan for the future however could be ethically killed which leaves open a small subset of actions that cannot be considered vegan while still being ethically sound (Singer 2011: 119-120).

Combining these findings, I envision a hypothetical ethical animal agriculture which would include a symbiotic relationship between humans and animals. The interests of both would have to be considered fairly. The animal would not be subjected to the abuse or killing that is part of today's animal agriculture. The few animals that do not have future oriented thoughts could be killed for human consumption. This small antispeciesist scope of ethical animal agriculture is not similar to ours and likely not economical in a capitalist society (Singer 2011: 119-120).

The application of the principle of equal considerations of interest leads to similar conclusions in sectors where animals are used as well, for example, "fur trade, hunting in all its different forms, circuses, rodeos, zoos and the pet business". Wherever the interests of the affected animals outweigh the interests of other beings, they should be protected. There are exceptions to this general analysis. For example, the hunting of an animal that is living in an area of overpopulation could be ethically killed as its preferences of not starving could outweigh its preference of continuing to live. An even more ethical choice in this case would be the use of animal contraceptives or sterilization (Singer 2011: 58-59, 121).

The previous general argument is only valid for people in industrialized societies with no special interests (Singer 2011: 54). Those interests should be looked at on a case-by-case basis.

As previously shown, pregnant people and children and even some in the general population have an interest in being carefully monitored by health professionals who can ensure that they are supplied adequately with the necessary nutrients (Bakaloudi et al. 2021: 3519; Sebastiani et al. 2019: 20-21; Kayode et al. 2022: 45; Fernandes et al. 2024: 16). If a healthcare system is not able to provide those vulnerable groups with the necessary nutrients, they have a non-negligible interest in a healthy life which allows them to consider consuming non-lethal (e.g. milk, eggs) animal products and even meat in cases where their life is at stake. This reasoning is ethically sound according to Singer (2011: 122), as humans have an exceptionally high capability for future oriented thought and consciousness. Thus, in edge cases the interest to live of a human weighs more than the interest of an animal to live. Similarly, subsistence hunters that are existentially dependent on hunting and would otherwise starve can reasonably claim that their killing of animals is ethical (Singer 2011: 54, 122). To summarize, there are some special cases where the use of animal products is permissible under preference utilitarianism.

Experimentation on animals constitutes another special case where the interests of the affected need to be weighed carefully. Experimentation on animals inflicts severe damage to the bodies of animals (European Commission 2023: 21-22, 34). The suffering of animals, due to these kinds of experiments, needs to be weighed against the interests of those that benefit from the experiments. Justification for animal experiments seems impossible for experiments with small benefits like the testing of cosmetic products (Singer 2011: 56-57). Experiments that hypothetically save the lives of thousands of beings while sacrificing a few could be considered ethical even under preference utilitarianism. But Singer (2011: 57-58) argues that even in these cases speciesist bias would lead us to sacrifice animals rather than humans with irreversible brain damage, although many healthy animals likely have a higher interest in not feeling pain because their capacity of

feeling pain is intact while the brain damaged human's is not. Instead of using brain damaged humans or animals as test subjects, Singer (2011: 57-58) prefers to stop experiments on living beings and fund research that employs consenting adults or alternative methods. He adds that by comparing animals to some humans with mental disabilities he wants to lift the status of animals and humans rather than downgrading the value of some disabled people. All "sentient beings" with different capacities for suffering and forethought should inherit "basic rights" (Singer 2011: 67).

In the last paragraphs my analysis of the competing interests regarding the consumption of animal products shows that while it is not ethically necessary to follow veganism in all cases it is certainly necessary to take an antispeciesist stance in all cases according to preference utilitarianism (Singer 2011: 50, 56-58). The antispeciesist stance frequently leads to veganism but is at the same time often dependent on certain structural conditions. An antispeciesist, and especially a vegan life, is more easily realizable if a government is supportive of these individual ethics, for example, through help with transitioning for farmers and an adequate health care system. An in-depth discussion of these political arguments is supplied in chapter "4 From individual ethics to policy".

3.2 Kantian approach

Before introducing Kant's ethical theory, I want to make it transparent that even though his ethics are supposed to be universal (Henning 2023: 15-16), the philosopher's anthropology is full of white supremacist, sexist, antiziganistic and antisemitic ideas (Eze 1995: 232; Kleingeld 2019: 5; Hund 2011: 85-86). According to Bernasconi (2002: 146-147), Kant is the originator of the first questionably scientific theory of race. For example, Kant (1923: 316) wrote as translated by Faull and Eze (1997: 63): "Humanity is at its greatest perfection in the race of the whites. The yellow Indians do have a meagre talent. The Negroes are far below them and at the lowest point are a part of the American peoples." I want to emphasize that by citing Kant and his ethical theory, I do not condone his racism and other discriminatory practices. Using the concept of "Black Radical Kantianism" by Mills (2018: 22-23), I am conscious of my internalized racism and Kant's explicit racism in order to apply his ethics truly universally.

Kant's ethics are meant to be universal and valid for all rational beings at every point in time which is why Kant was searching for a moral law that was universal "a priori" meaning without empirical knowledge. His derivation of this moral law starts with three basic premises (Henning 2023: 15-17).

Firstly, Kant (1911: 393) postulates that one can value a good will as good without any restrictions. Many other assets may seem good at first sight but can always turn bad or be harmful. His examples include reason, humor, power and courage which may be only

good in a moral sense if the underlying will is good as well. Contrary to the aforementioned consequentialist ethics, a good will is considered to be good even if its effects are not good, for example, if one is willing but not capable to enact one's good will (Kant 1911: 393-394).

Secondly, Kant (1911: 397) argues that having a good will entails acting out of a certain duty. What this duty contains is not clear right away. The philosopher provides the example of a merchant who sets his prices similarly for everyone. This is not dutiful behavior as the consequence that all customers are treated equally might be good but at the same time the merchant's will is turned towards his business. He treats everyone equally in order to keep his customers and not out of a good will and thus not out of a duty. His next example outlines a good friend who treats others well out of his inclination to spread joy. This friend might act dutifully but is not acting out of a duty but rather out of his inclination. Only the one that acts not out of his inclinations but does the right thing out of a duty is to be morally commended (Kant 1911: 397-398).

The third step in his derivation includes understanding what acting out of duty means and what duties are comprised of. Kant (1911: 399) says that an action out of a duty is not morally valuable because of its intentions but because of the maxim which underlies the action. Maxims are intentions of what to do and why to do something. They are created and then decided on before an action (Henning 2023: 29). Thus, maxims are the basis of all actions (Kant 1914: 24). This begs the question of how to know whether one's maxim is suitable for an action out of duty. Kant (1911: 400) asserts that maxims are the subjective principle of the will. The objective principle, which is supposed to guide all rational beings, is derived a priori and is claimed to be the practical law. Acting out of duty is to act in accordance with this moral law. A will is good when it is stripped of all inclinations. What remains is, on the objective side the law and on the subjective side the respect for the law. This results in the third premise: I shall only act as if I can will that my maxim becomes universal law. This means that I act out of a duty if I can will that my maxim will be universalized and be applied to everyone (Kant 1911: 400-402).

Kant then introduces imperatives which are practical guidelines for what one should do. Hypothetical imperatives are dependent on the goals of the actor while categorical imperatives are valid universally independent of the actor's goals which means that they are imperatives of ethicality, only bound by their form and their principle (Kant 1911: 413-414, 417; Henning 2023: 40-41). Similarly to a good will the categorical imperative is not dependent on any conditions like circumstances which makes it universal law. This is why the categorical imperative, as a universal law, can only demand that from us which is suitable to be universal law (Kant 1911: 420-421; Henning 2023: 42-43). In combination with the knowledge about maxims, Kant (1911: 420-421) concludes that the categorical

imperative must have the following content: Only act in accordance with the maxim which you can will to be a universal law.

The philosopher argues that there are two conditions which would preclude that one can will one's maxim to be universal law: First a logical contradiction and alternatively a will contradiction (Kant 1911: 424). Kant (1911: 422) provides cases regarding the two contradictions. For example, concerning the logical contradiction, a person is in a hardship and wants to borrow money without intending to pay it back. The person's maxim cannot be willed to be universal law as one could never borrow any money if everyone intends to not pay it back. The end of borrowing is logically impossible if the person's maxim includes the intention to not pay it back (Kant 1911: 422).

Another example concerns itself with the will contradiction, a person decides that they do not want to help others in need in any case. One can universalize this maxim and the world could logically continue to exist, but Kant (1911: 423) nevertheless reasons that one cannot will this maxim to be universal law because a good will that has ends or goals might be in need of assistance to reach its ends. To forgo the possible assistance cannot be willed as it would forgo the end as well (Kant 1911: 423; Henning 2023: 55). This is valid because if one considers a will and its ends one has to consider all of the necessary conditions as well. In other words, there are interests of the will that are fundamental to it, for example, not restricting one's choice of ends which results in a will contradiction (Kant 1911: 417; Henning 2023: 56). To summarize, Kant wants us to universalize our maxims in order to prevent us from raising ourselves above other persons through finding exceptions to the universalization. One has the duty to only do that which one can want everybody else doing it (Kant 1911: 424).

Which is why the second instance of the categorical imperative says to only use humanity, in yourself and other persons, as an end never only as a means. Humanity, in this case, represents rational beings that have the capacity to set ends (Kant 1914: 392; Kant 1911: 429, 436). Usually, we understand ends as goals. These restrict and define our future actions towards our goals. According to Henning (2023: 84-86), human beings are ends as well because they restrict our actions when we act for the sake of someone. The means to an end instance follows from the categorical imperative described above. One should not restrict the capacity of others to set ends for one's own gain. This would constitute using this capacity of others as means. We cannot universalize maxims that use others solely as means as we would raise ourselves above other persons. If everyone would use each other as means most ends could not be fulfilled resulting in logical or will contradictions (Kant 1911: 424, 438; Henning 2023: 87-88).

3.2.1 Duties towards present and future generations

The following part considers whether one owes any duties to themselves and the people of present and future generations in connection with the consumption of animal products. As discussed, the starting point is the categorical imperative and the universalization of our maxims (Kant 1911: 420-421). For example, a corresponding maxim may be: I want to consume animal products for nutrition and for my enjoyment. I argue that this maxim is not universalizable. As presented in part "2.1 Animal agriculture and climate change", the regular consumption of animal products is the cause for major CO₂e emissions and the following climate impacts (Eisen and Brown 2022: 4-6; Romanello et al. 2023: 1-2). This results in a logical contradiction, a will contradiction and a violation of the second categorical imperative which forbids anyone from using another only as a means (Kant 1911: 438; Henning 2023: 87-88).

A survey and life cycle assessment by Scarborough et al. (2023: 569) shows that on average a medium meat eater from the United Kingdom emits between 2.3 t and 2.6 t of CO₂e per year through their diet alone. Depending on the scenario, a lower bound scenario with a 1.5°C target and an upper bound scenario with a 2°C target including CCS, the per capita emissions targets for 2030 are set at 3.2-2.5 t of CO₂e/year, for 2040 at 2.2-1.4 t of CO₂e/year and for 2050 at 1.5-0.7 t CO₂e/year. This means that, in 2040 at the latest, a medium UK meat eater emits more CO₂e than the 1.5°C and 2°C targets permit (Akenji et al. 2021: 37, 41-42). The supply chains of animal products are threatened by climate change through droughts, heat waves and many other factors that influence feed production and the welfare of animals and workers (Godde et al. 2021: 12). Thus, a logical contradiction exists in the universalization of the maxim. One cannot will for everyone to continue consuming animal products at contemporary levels as it would threaten the end of consuming animals itself. Hollnaicher (2020: 685-686) argues analogously in regard to emission intensive activities, like driving cars and flying to a vacation destination.

A will contradiction like in the aforementioned assistance scenario is apparent as well. One cannot will anything that if universalized would restrict or damage the capacities to choose one's ends or reach one's ends (Kant 1911: 417, 423-424; Henning 2023: 56). The universalized maxim of animal consumption would result in severe restrictions to one's ends through physical and psychological damages or even deaths (Bressler 2021: 2; Lawrance et al. 2022: 451-453; Romanello et al. 2023: 2).

On a similar note, Ferretti (2023: 176-177) argues it is necessary to recognize the freedom that is essential to being a "moral agent". If we would not value the freedom of the people of present and future generations, we would violate their autonomy to establish ends for themselves. While we do not know which ends future generations will strive towards, Ferretti (2023: 176-177) suggests that a fair distribution of freedom in the future is a

necessary condition for being able to have "moral agency". This freedom argument is not only related to the will contradiction but also to the second categorical imperative. One should not use rational beings only as means to an end. If one consumes animal products in an unsustainable way, one diminishes the capacity of others to set their own ends in the future because of the climate impacts on their freedom. One has to respect the humanity, the rationality and end setting capability of humans (Kant 1911: 429, 438; Henning 2023: 87-88)

There is however a maxim that seems to be universalizable: I want to consume animal products for nutrition and for my enjoyment in a manner that is sustainable. The global vegetation absorbs 112-169 Gt of CO₂e/year which could be optimized through better land management, especially considering that a vegan agriculture would allow for more land to be restored (Hayek et al. 2021: 21; Sha et al. 2022: 2, 5). Additionally, the oceans act as carbon sinks with an absorption of 3 Gt CO₂e per year (Gruber et al. 2023: 120). Depending on the carbon concentration in the atmosphere and the status of the decarbonization in other sectors like electricity generation there will remain a sustainable CO₂e-budget for animal product consumption allowing for the maxim to be universalized. From an inter-generational viewpoint, Kantian individual ethics allow for the consumption of a sustainable amount of animal products.

3.2.2 Animal ethics

The protection of the categorical imperative to not be used as only means to an end is only afforded to rational beings (Kant 1912: 114). Animals are seen by Kant (1905: 330-331) not as machines but as life forms as they exhibit free movement guided by their need for food. That means that some kind of reason which they display through instincts is attributed to animals. Rationality, free will and morality on the other hand are uniquely human attributes (Kant 1907: 70-71). Thus, animals lack self-consciousness and rationality in contrast to humans which is why Kant (1907: 127) argues that humans should be considered to be above all non-rational beings.

Consequently, animals may be used as means to an end which Kant (1912: 114) underscores with an example: A human says to a sheep that he may use its fur as clothing because he has the right to nature's gifts. This right raises humans above other beings. Humans may use animals as means and instruments for their own goals. By way of contrast, Kant stresses that the human cannot say this to any other human. They are to be seen as equal participants in nature's gifts (Kant 1912: 114).

Nevertheless, Kant (1914: 443) does apply some protections towards animals. He condones the killing of animals, as well as the use of animals for work like agricultural work or drawing carriages. At the same time, the philosopher does not allow for the unnecessary

violent and cruel treatment of animals, not because of a moral duty towards them but because of a duty of humans towards themselves. The brutal treatment of animals would lead to less compassion towards the animals which in turn would decrease the natural human faculties of morality (Kant 1914: 443). Kant seems to contradict himself here as Rojas (2015: 2294) notes. Kant's argument implies some kind of indirect duty towards animals through a duty towards oneself. As described, one does not have any duties towards animals, so it remains unclear how one's natural moral capacities would weaken due to cruel behavior towards animals as this cruel behavior is not immoral (Rojas 2015: 2294).

Broadie and Pybus (1974: 375-377) acknowledge the same contradiction. They note that the philosopher clearly does not see animals as persons or rational beings which consequently indicates that animals may be used as means to an end. While we may owe indirect duties to non-rational beings they can only stem from direct duties towards oneself or other humans. The issue with Kant relying on human psychology in order to forbid the cruel treatment of animals is that he does not justify his argument through his moral laws but through the implication that the cruel treatment might negatively affect the ability to assess one's duties towards other humans (Broadie and Pybus 1974: 375-382). Although this might be seen as an indirect duty, it is not a moral duty in the Kantian sense, according to Broadie and Pybus (1974: 382), as it is universalizable thus not violating the categorical imperative. If the maxim to not treat animals cruelly, because this could lead to using rational beings as means, were to be universalized, this would lead to the conclusion that one should not use non-rational beings as means. This contradicts other Kantian postulations where he explicitly allows for animals to be used as means (Broadie and Pybus 1974: 382-383; Kant 1912: 114).

In a response to the argument of Broadie and Pybus (1974), Regan (1976: 471-472) counters that Kant's perspective on animals is not contradictory. Cruelly treating animals and using animals as means are not identical concepts. One can use animals as means while not cruelly treating them. Which is why the claim of Broadie and Pybus (1974: 382-383) that the generalization of the indirect duties towards animals leads to the prohibition of using animals as means may be wrong. Indeed, only treating animals cruelly will lead to the deterioration of one's moral capacities which is why Kant insists only on the indirect duty towards animals because it could lead to other persons' rationality being violated (Regan 1976: 471-472).

In the end, whether one is in favor of the strict Kantian interpretation or of the one where Kant contradicts himself makes no meaningful difference regarding my moral claim. The strict interpretation results in the conclusion that one may use animals as means, and that there are no duties towards animals not even regarding cruel treatment (Kant 1907: 127).

The Kantian contradiction would still allow for animals to be used as means while one should not treat animals cruelly without necessity (Kant 1914: 443). In animal agriculture animals are regularly treated as means to an end for food production which would be allowed under both interpretations. The regular cruel treatment of animals in animal agriculture which is described in chapter "2.2 Evidence of harm towards animals in industrialized agriculture" would have to be restricted to a necessary minimum, according to Kant's possibly contradictory theory of an indirect duty towards animals (Regan 1976: 472). Consequently, my initial moral claim that an individual or even the state should protect animal rights and enact veganism cannot be upheld with Kantian ethics on animals, although Kant could be in favor of laws against animal abuse. Modern Kantian interpretations, for example by Korsgaard (2018) or Müller (2022), come to different conclusions regarding Kantian animal ethics and are grounds for further research perspectives in works of larger scope.

4 From individual ethics to policy

In this chapter utilitarian and Kantian ethics are applied to political philosophy. My original hypothesis is revised in three different ways according to the findings, and policy implications are derived from the altered hypotheses.

4.1 Preference utilitarian political philosophy

Utilitarianism is not only an ethical philosophy for individuals but rather had its origins in a political philosophy as a guideline for governments. The basic principle by Bentham (1988: 3) that "it is the greatest happiness of the greatest number that is the measure of right and wrong" laid the groundwork for his political philosophy in which lawmakers should judge their legislation by maximizing the utility of a law. A law ought to maximize the happiness of the constituents (Bentham 1988: 3, 25-26; Martin 1997: 276).

The measurement of utility in classical utilitarianism is happiness. Applied to preference utilitarianism, lawmakers are obliged to maximize the satisfaction of the preferences of those that are affected by a law. A law is right if it considers the interests of all affected beings (Singer 2011: 2-3, 20, 48; Berggren 1999: 347). This means that my prior analysis of the equal consideration of interests regarding animal products needs to be applied to legislation. Ethically thinking lawmakers should devise a law in which the interests of all affected are considered fairly.

Such an equal consideration of interests should result in a law where the heavy weighing interests of the people of present and future generations and the heavy weighing interests of animals are specially protected. As discussed in part "3.1.5 Analysis", this produces legislation which incorporates veganism for the general public and as a minimum anti-speciesism in order to recognize the special interests of, for example, subsistence hunters and other vulnerable groups. I argue that the rights of farmers should also not be

neglected. The related policy implications are presented in "4.3 Policy implications". My initial hypothesis is altered in order to include the preference utilitarian findings which allow some non-vegan but always antispeciesist conduct:

Moral claims: The state should fairly consider the interests of present and future generations and the interests of animals.

Empirical claims: Animal agriculture is a major contributor to climate change and its corresponding effects and violates the wellbeing of animals regularly.

Conclusion: The state should enforce antispeciesism by law.

4.2 Kantian political philosophy

Although Kant (1914: 203-372) does put forward a political and legal theory in "Die Metaphysik der Sitten" and in other writings, the question whether his moral law, the categorical imperative, can be applied to his theory of law is controversial (Horn 2014: 9). The philosopher's general principle of law says that an action is right if it or its maxim may exist side by side with the freedom of everyone in conformity with a universal law which could imply that there is a connection between the categorical imperative and his legal theory (Kant 1914: 230). Still, two major scientific factions emerge in the debate. The proponents of the dependence thesis argue that the law can be inferred from the categorical imperative while the proponents of the independence or separation thesis argue that the categorical imperative and the law are two kinds of normative phenomena (Horn 2014: 9). Because a nuanced discussion of the debate would warrant another bachelor thesis, I outline two stances on opposite sides of the debate spectrum in order to showcase the implications for my original hypothesis.

4.2.1 Separation thesis

According to Brown (1962: 33), Kant is unsuccessful in applying his moral law, the categorical imperative, to law in a legal sense. While Kant published numerous arguments on political topics, they seem to be separate from his ethical theory (Brown 1962: 33). Brown (1962: 33) even claims that in spite of Kant's numerous publications on political topics he seems to have no philosophy of law at all because of his failure to connect the moral law to a legal philosophy. What the philosopher's theory of law is missing, is guidance on how to apply the categorical imperative to "positive law" (Brown 1962: 36).

Brown (1962: 36) cites several examples demonstrating that while Kant proposes various principles regarding law they do not correspond to the categorical imperative. One of them is the justification of the law of exact retaliation by Kant (1914: 331). The philosopher initiates his argument by stating that penal law is the categorical imperative. One should not penalize a criminal for the criminal's own good or for the good of society as this would

constitute a use of someone solely as a means which is immoral, according to the second instance of the categorical imperative (Kant 1911: 429; Kant 1914: 331). But then Kant (1914: 332) argues that the measure for just penalization for crimes is the principle of equality: You steal from someone, you steal from yourself; you hit someone, you hit yourself; you kill someone, you kill yourself. This principle is supposed to explain why the law of exact retaliation is just.

Even though Kant does not explicitly claim the following, Brown (1962: 36-38) is of the opinion that the principle of equality is related to the first instance of the categorical imperative that one should only act on a maxim that one can will to be a universal law (Kant 1911: 420-421). If you kill someone you would allow others to kill you through the universalization of your maxim. One cannot will such a maxim to be universalized, as discussed, so the universalization of my killing maxim is not rational. Thus Brown (1962: 36-38) asserts that Kant fails to prove that the law of exact retaliation follows from the categorical imperative. Brown (1962: 38-47) continues his argument by providing several more examples of the disconnect between Kant's opinions on political topics and his moral philosophy and concludes by saying that Kant has no philosophy of law as his principles might provide certain ideals like freedom and peace but lack guidelines on the moral justification of laws.

If one accepts the separation thesis, Kantian ethics cannot be applied to Kantian political philosophy. Kant (1997: 696) wrote about a league of nations including a senate with representatives debating about conflicts between the nations, and consequently looking at Kant's political philosophy concerning intergenerational justice and climate politics as a separate matter is an interesting research avenue, but my initial goal is to apply individual ethics to political philosophy and in turn to policy.

My hypothesis needs to be revised on the basis of the separation thesis and prior findings. The categorical imperative mandates that only a sustainable consumption of animal products is ethical. Additionally, as discussed, Kantian individual ethics do not allow for the protection of animals especially considering the strict interpretation that allows for any treatment of animals due to their lack of rationality (Kant 1912: 114). The aforementioned Kantian contradictory interpretation enacts mild protections regarding undue violent treatment of animals (Kant 1914: 443) and is reflected in brackets:

Moral claims: Individuals should not use others solely as means (and should not treat animals unnecessarily brutal).

Empirical claims: Animal agriculture is a major contributor to climate change and its corresponding effects (and violates the wellbeing of animals regularly).

Conclusion: Individuals should only consume animal products in a sustainable amount (and only products that were sourced without unnecessary harm towards animals).

4.2.2 Dependence thesis

While there are several scholars who are in favor of a weak coupling between Kantian ethics and his legal theory, Seel (2009: 73) prefers a "strong dependence" representing the opposite of the debate spectrum. He wants to prove that Kant's derivation of the general principle of law, the Universal Law of Right, is dependent on the categorical imperative (Seel 2009: 76; Kant 1914: 231). Seel (2009: 71) translates the Universal Law of Right as follows: "So act externally that the free use of your choice can coexist with the freedom of everyone in accordance with a universal law" (Kant 1914: 231). As described beforehand, the categorical imperative imposes that one's maxim needs to be universalizable in order for an action to be moral. Consequently, Seel (2009: 76-77) validates the universalizability of the following maxim that is derived from the Law of Right: "I will always act externally in such a way that my freedom is limited to the domain that can coexist with every one's equally great freedom according to a universal law". As he finds no logical or will contradictions the maxim that was derived from the Law of Right is moral according to the categorical imperative. He concludes that rational beings have a right to freedom as long as it can coexist with the freedom of others under a universal law (Seel 2009: 77, 90).

Indeed, Kant (1914: 237) says that freedom that is compatible with the freedom of others is a fundamental right to humanity. If one follows the dependence thesis, this right is consistent with the categorical imperative and is derived from it. One has to have this right in order to be able to act autonomously without being used as only a means. The end setting capability of rational beings can only be respected if rational beings have a right to freedom (Kersting 1984: 93-94). A kind of reciprocal freedom as the Law of Right suggests. One's own freedom must be able to coexist with the freedom of others (Kant 1914: 231), which is not possible in a world where climate change is not mitigated. Climate change impairs the freedom of present and future generations through its consequences on global health and the economy (Rennert et al. 2022: 687-688; Lawrance et al. 2022: 451-453; Romanello et al. 2023: 2). Only effective climate change mitigation which the transformation of animal agriculture has to be a part of because of its incompatibility with the 2°C target can respect the Kantian right of freedom (Clark et al. 2020: 705; Kersting 1984: 93-94). Thus, in consideration of the dependence thesis my hypothesis needs to be revised as follows:

Moral claims: Present and future generations have a right to reciprocal freedom.

Empirical claims: Animal agriculture is a major contributor to climate change and its corresponding effects.

Conclusion: The state should restrict animal agriculture to a sustainable minimum.

4.3 Policy implications

At first glance Kantian and preference utilitarian political philosophy seem to not have much in common and certainly, if one is a proponent of the separation thesis, Kantian ethics cannot be the cause for policy changes but only changes in individual behavior (Brown 1962: 33). However, if one advocates for the dependence thesis, Kantian and preference utilitarian political philosophy do agree that agriculture has to transition towards a sustainable agriculture which largely depends on plant-based products. Kantian political philosophy bases this claim on freedom for moral agents that will be heavily restricted if animal agriculture continues its CO₂e emission as is (Clark et al. 2020: 705; Kersting 1984: 93-94). A preference utilitarian political philosophy approach reaches the same conclusion through the principle of equal consideration of interest which mandates legislators to acknowledge the interests of present and future generations which would be violated if the GHG emissions stay at current levels (Eisen and Brown 2022: 12-13; Berggren 1999: 347). As such, there are policy implications for a just transition towards a sustainable future in general and in particular a sustainable agriculture.

Additionally, preference utilitarian political philosophy demands antispeciesist legislation which protects animals and their rights which need be taken into account due to the principle of equal consideration of interests which is applicable to state actors (Singer 2011: 50-51; Berggren 1999: 347). This is by no means an exhaustive list but should give readers some policy ideas for future lawmaking.

4.3.1 Just transition towards sustainable agriculture

Because of the dependence of over a billion people on animal agriculture several policy changes are necessary to facilitate the transition towards sustainable partial or fully vegan agriculture (Eisen and Brown 2022: 12-13). Dorgbetor et al. (2022: 6-7), for example, suggest "early warning systems" in order to notice and contain plant diseases which could threaten the access to food and income for farmers and consumers. Farmers also need financing and knowledge in order to initiate their transition towards sustainable agriculture (Dorgbetor et al. 2022: 10-11). For example in interviews, farmers in North America wish for government programs that ease the transition towards a vegan agriculture through "debt forgiveness, compensating for losses incurred, and funding (re)training initiatives". They also advocate for government funding for research on the transition and for giving tax credits for restoring unused land in order to generate carbon sinks (Newton and Blaustein-Rejto 2021: 8).

An important area for research is the lack of manure-based fertilizer stemming from animal agriculture. An alternative could be "biocyclic-vegan" agriculture in which nutrients are introduced into the ground by plant-based compost. Another could be the combination of plant-based fertilizer and mineral fertilizer, as well as the introduction of fertilizer derived from human excrements which does pose health risks (Mann 2020: 126-127). An additional potential area for research is changing crop rotations in order to ensure that crops are high in certain nutrients for example calcium from which consumers would benefit (Krayner 2021: 50).

Many of these policy changes require international cooperation as national solo efforts would likely not shift supply and demand of animal products in significant amounts (Dorgbetor et al. 2022: 10). Similarly to the "Green Climate Fund", which raises capital from developed and developing states and redistributes the money to mitigation and adaptation projects all over the world, an international fund would have to be implemented. This fund could financially support research, adaptation and compensation regarding the transition towards sustainable agriculture (Manzanares 2017: 1-5).

Depending on their needs, some exceptions to a fully vegan agriculture would have to be made, for example, for subsistence hunters (Singer 2011: 54). Furthermore, regarding a partially or fully plant-based agriculture some vulnerable groups will need support for their nutritional requirements. This warrants education, research, training of health care professional and access to supplements (Kayode et al. 2022: 45; Bakaloudi et al. 2021: 3518; Sebastiani et al. 2019: 20-21; Kris-Etherton et al. 2014: 1162).

4.3.2 Animals rights

According to preference utilitarianism as a political philosophy, lawmakers need to protect the interests of animals similarly to the interests of humans due to the obligation to maximize the preferences of those that are affected by policy (Singer 2011: 50-51; Berggren 1999: 347). This could give rise to animal rights similar to human rights.

For example, Donaldson and Kymlicka (2011: 19-20) demand certain "inviolable" rights for animals. In preference utilitarian thought, the violation of rights is permissible after a fair consideration of interests (Singer 2011: 56). Nevertheless, Donaldson and Kymlicka (2011: 21) note that their account of animal rights is still interesting even for those utilitarians that do not endorse inviolable rights. These "Universal Basic Rights for Animals" include the "rights to life and liberty". This consequently outlaws hurting and slaughtering animals as well as treating animals as property, slaves or captives. As a consequence, a ban on animal agriculture, "hunting", keeping animals as pets and zoos could be enacted (Donaldson and Kymlicka 2011: 40, 49). Donaldson and Kymlicka (2011: 49) also argue for an end to animal experimentation. Animal experimentation could be permissible in

edge cases under preference utilitarianism, although Singer (2011: 57-58) favors the financing of alternative methods to animal experimentation.

Another policy option is the abolitionist stance which advocates for a cessation of using animals in any way (Francione 2008: 62-63). This however is not compatible with preference utilitarianism as Singer (2011: 56-58) condones the use of animals in some cases whenever the interests of others outweigh the interests of animals. In contrast to the abolitionist argument and more in line with preference utilitarianism is the proposition of Donaldson and Kymlicka (2011: 101) to grant domesticated animals citizenship. This means that domesticated animals ought to be included in our society, for example, through socialization and the admission to our communal spaces including a right to "freedom of movement". Animals as citizens would also have a right to health care and a right to political representation through intermediaries (Donaldson and Kymlicka 2011: 123, 126, 142, 153-154).

Even some form of the use of animal products could be permitted as long as the agency of the animal citizens is recognized appropriately. Donaldson and Kymlicka (2011: 135-136) provide the example of freely wandering domesticated sheep who cannot free themselves from their fur coat. Shearing their wool and using the wool afterwards for our own purposes could be acceptable as the animals are not exploited but rather freed from their coat in a mutually beneficial exchange. Additionally, wild animals could be understood as sovereign beings whose territory and livelihood should not be "colonized" or exploited (Donaldson and Kymlicka 2011: 135-136, 205).

This "Zoopolis", as Donaldson and Kymlicka (2011: 256) call it, is an example for a society and for policies that consider the interests of different beings fairly and as such are compatible policy options under preference utilitarianism (Singer 2011: 50-51; Berggren 1999: 347).

5 Conclusion

My argument whether veganism should be enacted by law starts off with proving my empirical claim that animal agriculture is responsible for major CO_{2e} emissions and the corresponding negative effects on the people of present and future generations and that animals are regularly suffering in current animal agriculture practices (Eisen and Brown 2022: 4-6; Romanello et al. 2023: 1-2; Hampton et al. 2021: 28).

Subsequently, I analyzed whether these current conditions are ethical on an individual level. The preference utilitarian approach shows that one has to consider the interests of all those that are affected by animal agriculture which results in the conclusion that with minor exceptions one is ethically obligated to become vegan. In the case of some special

interests, one is compelled to fairly consider the interests of animals in an antispeciesist way (Singer 2011: 50-51, 56-58).

The application of Kant's moral law, the categorical imperative, leads to the verdict that one has a duty towards present and future generations which means that, ethically, one can only consume a sustainable amount of animal products (Kant 1911: 424, 429). Animals are not protected by the categorical imperative, although some scholars argue for indirect duties towards animals. Those indirect duties protect animals from undue violence (Kant 1912: 114; Broadie and Pybus 1974: 375-377; Regan 1976: 471-472).

The application of these individual ethics to Kantian and preference utilitarian political philosophy demonstrates several differences and similarities. Followers of the Kantian separation thesis argue that Kantian individual ethics cannot be applied to Kantian political philosophy, ending the argument towards veganism by law (Brown 1962: 33). However, proponents of the Kantian dependence thesis and preference utilitarian political philosophy find commonality in the obligation to respect the interests of present and future generations (Seel 2009: 77; Kersting 1984: 93-94; Singer 2011: 235). Policy makers ought to guard these interests by restricting animal agriculture to a small and sustainable amount.

A just transition towards a plant-based agriculture incorporates policy options, like subsidies for transitioning farmers and funding of research regarding, for example, sustainable fertilizer and crop rotations (Newton and Blaustein-Rejto 2021: 8; Mann 2020: 126-127; Krayner 2021: 50). International cooperation towards the just transition will be necessary as well (Dorgbetor et al. 2022: 10). Special interests of, for example, subsistence hunters and pregnant people should be recognized (Singer 2011: 54; Sebastiani et al. 2019: 20-21).

Preference utilitarian political philosophy demands not only sustainable policies but also antispeciesist policies. Although antispeciesism is closely related to veganism, some animal use continues to be permitted contrary to veganism (Singer 2011: 50-51, 56-58). Policy realizations could include giving animals certain rights, like the "rights to life and liberty" (Donaldson and Kymlicka 2011: 40). Additionally, Donaldson and Kymlicka (2011: 256) propose awarding animals citizenship in a "Zoopolis" which would further protect the interests of animals (Donaldson and Kymlicka 2011: 101).

To summarize, Kantian and preference utilitarian ethics and political philosophy demand a sustainable agricultural transition. Preference utilitarianism also requires enacting anti-speciesism by law.

14596 words

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