

Abstract for Communication Skills I Presentation

Vegetarianism is practiced by millions of people throughout the world across multiple cultures. Vegetarians are people who do not eat meat. Veganism can also be considered a stricter form of vegetarianism; however, the following project will base itself off of vegetarianism and exclude veganism. Becoming vegetarian is a very personal decision influenced by external factors, and although each person has their own reason for becoming a vegetarian, the main motivations can be split into three groups: environmental impact, health, and morality.

Becoming a vegetarian significantly reduces one's carbon footprint produced by food. Vegetables simply need to be watered and transported, whereas animals need to be fed food, which has already been watered and transported, and slaughtered and transported themselves. In some cases, the amount of carbon dioxide produced per kilogram of meat is almost 10x that of the vegetable it is fed. In addition, animals produce massive amounts of waste that needs to be treated before it can be released back into the environment. Vegetarian diets, when practiced holistically, will by nature contain fewer saturated fats and cholesterol, which are known contributors to heart disease. In addition, plant-based foods have a lower concentration of calories than animal-based foods, which can lead to weight loss over an extended period with regular physical activity. Vegetarianism also developed in anti-capitalism movements to protest mass production. Nowadays most animals that are eaten are kept in small cages and are treated as objects to be used. Many vegetarians object the treatment of living creatures and for that reason put their money where their mouth is and refuse to support companies that treat animals what they consider to be inhumanely. A large movement that has developed out of moral vegetarians is the idea of flexitarianism, which describes somebody who eats meat sparingly and only under the right circumstances, for example if the animal was raised in a socially responsible manner.

Environmental vegetarianism is the vegetarian practice motivated by the desire not to negatively impact the environment. The livestock sector is estimated to be responsible for around 14.5% of the total man-made emitted greenhouse gases in the world, according to the Food and Agriculture Organization of the United Nations. That represents a total emission of 7.1 Gigatons of CO₂-equivalents per year. These emissions are divided into carbon dioxide, nitrous oxide and methane, with respectively 27 %, 29 % and 44 % of total emissions. [1]

The industry responsible for the by far largest amount of greenhouse emissions is the cattle industry, which contributes about 65% of all emissions from the livestock sector. The biggest contributions to this statistic are the production of food for cattle and their digestive process. Furthermore, pig meat contributes 9%, buffalo milk and meat 8%, chicken meat and eggs 8%, small ruminant milk and meat 6%, while the rest is divided among other emission sources. Fossil fuels used along the supply chain contribute about 20% to the total emissions in the sector. [1]

Vegetarianism is the practice of abstaining from the consumption of meat, while dairy products can still be a part of one's diet. Therefore, it makes sense to split the total greenhouse emissions into those from meat production and those related to the dairy business. Within the cattle industry's 65% contribution to the livestock sector emissions, 41% is caused by meat production and 20% by milk production. If the contributions from pig, buffalo, chicken and small ruminants are added, more than 61% of the emissions come from meat production without taking the supply chain into account. [1]

In addition to greenhouse gases, the animal product production is associated with deforestation, degradation, pollution, use of great land areas, and a large consumption of water. Deforestation of the rainforest due to the expansion of agricultural area is assumed to be up to 7% of the total area of the Amazon forest [2]. It is also known that cattle are a prominent source of soil erosion due to trampling on the ground and overgrazing, which is a big reason for the increasing rate of desertification. Local pollution of nearby environments due to manure, animal waste and urine may change the pH and composition of local water resources. The water consumption of the meat industry overshadows that of the consumption to produce cereals, vegetables and fruits [3]. In some cases, the amount of water needed per kilogram of meat is almost six times that of the vegetable it is fed [4]. About 98% of the water consumed in the meat industry is consumed while producing food for the animals. It is estimated that livestock consumes one third of all cereal production and uses about 40% of all global arable land [5].

A typical vegetarian diet consists largely of cereals, legumes, nuts, vegetables and fruits [6]. This can have both benefits but also disadvantages regarding health. A mainly plant based diet often contains less total energy due to the reduced intake of fat and protein [7]. At the same time, a vegetarian diet is higher in complex carbohydrates and contains two to three times more fiber [7]. It also contains more vitamin C and E [8] as well as antioxidants [9] that protect the cells from free radicals and thus from damage [10]. A plant-based diet is additionally higher in magnesium and contains less saturated fat and cholesterol [9]. A high amount of the latter can cause atherosclerosis [11].

The absence of meat often leads to a reduced intake of protein, vitamin B₁₂ [8], iron and zinc [9]. Vitamin B₁₂ is necessary for the synthesis of DNA as well as blood formation [12]. The only source of B₁₂ for vegetarians is dairy like yogurt and eggs [8]. A deficiency of this vitamin can cause anaemia [8] and nerve problems [12]. The possible absorption of B₁₂ is reduced by the consumption of alcohol and tobacco [7]. This, of course, applies to both vegetarians and non-vegetarians; however, it can be a larger issue for vegetarians who already a reduced intake of this vitamin [7]. The iron taken in through plants has a lower bioavailability compared to iron in meat products [13]. The same is true for some other essential nutrients [13]. Proteins are needed for muscles and hormone balance [14]. Whereas iron is part of human blood cells [15], zinc is important for the immune system [10].

Even though deficiencies are possible, the necessary nutrients and vitamins can be substituted with a properly practiced vegetarian diet [13]. For example, legumes included in the diet can provide zinc [7] and green leafy vegetables can supply humans with iron [7]. The absorption of iron can

furthermore be enhanced by consuming vitamin C simultaneously [8]. Regarding protein, the optimal level can be reached with nuts, seeds, grains and dairy products [7].

Correctly practiced vegetarian diets can have a plethora of benefits. Statistics show that vegetarians tend to have a lower Body mass index [9] which puts the weight in relation to the height of a person [10]. This can be explained with the lower energy content of plant foods [13] which are consumed in greater amounts and with a higher variety due to the absence of meat [13]. Considering that vegetarians are often quite health conscious, a well-balanced diet and increased exercise additionally support the lower weight [7]. The reduced intake of cholesterol and saturated fat lowers the risk of dying from ischemic heart diseases [6]. A balanced vegetarian diet can also reduce the risk of Type II diabetes due to the lower intake of fat and protein combined with a higher intake of fiber [7].

With a vegetarian diet it is possible to obtain enough nutrients for all stages of the life cycle but only when practiced correctly [13]. It can even prevent diseases that are diet-related [13]; however, nutrient deficiency can occur with an unbalanced vegetarian diet [13]. Studies are often inconclusive when evaluating the health benefits of a vegetarian diet because it is closely related to the health consciousness of the person excluding meat from their diet.

In order to argue vegetarianism on a moral basis, one must first define the nature of an animal. Does an animal feel pain? Is that pain comparable to that which humans experience, and to what extent should the feelings of the animal, if they have any, be valued with comparison to our needs? The most extreme answers to these questions in favor of moral vegetarianism would be that animals do feel pain and this pain should not be valued any less than that of humans, meaning that killing an animal would be equivocal to killing a human being, which in most societies is considered one of the worst moral decisions. At a societal level, animal pain and suffering are recognized in laws and regulations against animal cruelty. Most countries have animal cruelty laws, which would logically mean that animals feel pain. Following the widely accepted notion that animals feel pain, it is up to the individual to value that pain as equivalent to that of humans. Religions often provide a framework for the place humans and animals have in societies and while some religions dictate that all living creatures are equal, many religions contest that animals are vessels to sustain humans.

A less restrictive argument for moral vegetarianism argues that it is ok to kill animals for sustenance, however the animals need to be kept in humane conditions. These consumers put their money where their mouth is and consciously do not support consumerism by buying the cheapest meat from factory farming, but rather ensure that their quality meat has lived a high-quality life often on a free range with little barriers to their motion. The moral vegetarians using this argument are also referred to as flexitarians because they will only eat meat if it has met their moral raising standards.

Vegetarianism is a personal choice highly influenced by societal standards and current science. In comparison to meat consumption, vegetarianism reduces one's carbon footprint. A well-rounded vegetarian diet supports a healthy lifestyle, and depending on social standards, it may or may not be morally wrong to kill an animal or keep them in confinement.

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