

Running head: VEGETARIANS VS. VEGANS

1

Vegetarians versus Vegans

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Abstract

There is a gap in literature related to studies that explicitly compare vegetarians to vegans, as existing studies typically group these diets together and examine carnivorous and omnivorous diets in order to identify similarities and differences. The purpose of this study is to look at vegetarian and vegan diets to see if differences in attitudes towards animals, perceptions of animal usage, consumption, and morality exist. Participants included vegetarian and vegan Liberty University students (graduate and undergraduate, online and residential) who were at least 18 years old. Overall, one hundred students took part in the study, 50 of them were vegetarian and 50 of them were vegan. They completed an anonymous online survey measuring demographics, attitudes towards animals, perceptions of animal usage, and morality. Overall, there was a statistically significant difference between vegans and vegetarians in attitudes toward animals as well as their perception of human and animal similarity. There was also a significant difference between one of the five domains regarding moral decision-making, the fairness/reciprocity domain. However, in the other four domains (harm/care, in-group/loyalty, authority/respect, and purity/sanctity), there was not a significant difference between the vegan and vegetarian group. Since past studies have grouped vegans and vegetarians as alike, these results seem support the importance of maintaining a separation between diets and subgroups in future studies since differences may exist between the groups.

Keywords: vegan, vegetarian, plant-based, diet differences, animals

Vegetarians versus Vegans

The Disparity Between Plant-Based Diets

Vegan products and alternatives are more widespread now than ever before. In addition, the taste, quality, and texture of these products are becoming realistic replicas to that of authentic meat and dairy. Companies have made efforts to produce ethical and sustainable products and alternatives that make plant-based diets easier and more convenient than ever. In addition, milk sales have plummeted as have meat sales. For these reasons, many expect plant-based diets to continue in the trend of normalcy within the upcoming months and years (Saunders, 2014). Recently, companies like Just Egg, Impossible, Gardein, Tofurky, and Beyond Meat have come out with vegan meat and egg alternatives made to taste and look like real meat. In addition, chains like Burger King, White Castle, Denny's, Taco Bell, Hardee's, and Dunkin' Donuts have added vegan options to their menu like plant-based Whoppers, sausage and egg sandwiches, and Crunchwrap Supremes. Companies like Kite Hill, Daiya, Follow Your Heart, and Earth Balance have come out with dairy alternatives as well like vegan butter, cheeses, spreads, yogurts, and nondairy milks. Major organizations like PETA, Mercy for Animals, Nonhuman Rights Project, Coalition for Consumer Information on Cosmetics are in support of plant-based diets in addition to advocacy for animal rights. They seek to educate consumers on the reality behind the lives of animals used for food, fur, entertainment, as well as impacts on the environment, human health, and animal agriculture.

Despite increased popularity, awareness, and offerings regarding plant-based diets, there is still a gray area regarding what constitutes a diet that is vegan, vegetarian, or a variation (subgroup) of the two. In the literature, all classes of vegetarians, vegans, and other subcategories are grouped together simply because they limit or eliminate the consumption of meat. However, there is a significant difference between consuming meat and not consuming meat, as well as the consumption of dairy versus eliminating it completely. While most people who have adopted a plant-based diet typically do not consume any red meats or poultry, some still eat eggs, seafood, and dairy products, all of which are still animal derivatives (Kolbe, 2018). The umbrella category of plant-based diets therefore may contribute to the underlying assumption that because of a restricted or limited meat consumption, all plant-based diets can be grouped together. Furthermore, they can be compared and contrasted as a whole to omnivorous and carnivorous diets. Due to this, many studies neglect the crucial distinction between vegans and vegetarians, treating them as one in the same. There may be a gray area in terms of recognizing the discrepancy between different subgroups of diets that are considered plant-based. Therefore, it is important to note the following distinction: one group is still consuming animal products (vegetarians), while the other has completely eliminated them (vegans) (Cornish, Raubenheimer, & McGreevy, 2016). For this reason, it is expected that a difference may in fact exist between vegans and vegetarians. Since this distinction in empirical studies has not yet been explored, this study aims to begin the exploration and fill the gap. Findings and implications from this study could affect future studies in terms

of the categorization (or lack of) when it comes to plant-based diets and what exactly it means to be vegan, vegetarian, or something in between.

Overall, the varying definitions of vegan and vegetarian in combination with uncertainty and misconceptions, have created difficulty in the realm of research leading to confusion or misinformation (Thorning et al., 2016). This variation in the description of vegans, vegetarians, and everything in between can be attributed to many different factors. For one, someone simply may not be familiar with the difference between dairy, meat, and seafood consumption and how that affects a given classification. For example, people might associate milk and cheese with being dairy products, but typically forget that butter or chocolate are also considered dairy. Furthermore, a person may not be aware of what products are derived from animals, and may not even know whether or not something they are eating is an animal product. Knowledge pertaining to food labels and ingredients is often necessary to make the distinction (Rosi et al., 2017). Otherwise, people may be blindly consuming products with the assumption that they either are or are not derived from an animal. Others do not agree with the dictionary definitions, may create their own definition, or may simply identify as vegan or vegetarian when confronted in order to fit in or follow trends (Rothgerber, 2015). For instance, one may claim to be vegan but may have a “cheat” day once a week and eat chicken. Another might eat dairy daily and still consider themselves to be a vegan. Studies and articles that have covered different aspects of plant-based diets also tend to blur the lines between what constitutes a vegan, vegetarian, pescatarian, or other subgroup. Limitations of these past studies also include the self-report aspect of the consumers’ diets, along with

consistency related to the reported diet. Responses are analyzed based on what participants' report, not necessarily on what diet they actually follow and how closely they follow it. In addition, objective measures have not been implemented regarding the classification and separation of the different diets that allow for accurate comparisons and conclusions to be drawn (Rosenfeld, 2019). Therefore, this study aims to fill the gap in the literature regarding the distinction between, and separation of, a vegan and vegetarian diet. In addition, potential differences between vegans and vegetarians will be explored on factors of morality, perceptions of animals, and attitudes relating to their usage and consumption.

Literature Review

Meat Paradox

The field of psychology has recently and progressively been exposed to what has been termed the "meat paradox," along with related research. This term refers to the issue that arises when people who are self-proclaimed animal lovers still find themselves to be consumers of animals, basically begging the question – how can you say you love animals if you still choose to eat them? While consumers enjoy the taste and fulfillment of meat, they may simultaneously experience guilt through the acknowledgment that they are eating something that was once a living being and therefore contributing to the suffering and death of an animal. Simply put, they love animals, but they also love eating them (Allen, Wilson, Ng, & Dunne, 2000). This dilemma has been explained by cognitive dissonance, or the misalignment between one's beliefs and actions. This misalignment brings forth feelings of discomfort and anxiety from which relief is sought.

In order to reduce the dissonance, behaviors and cognitions must be aligned and consistent with one another, so a person must either change their beliefs or change their actions to bring them back in line with one another (Milford, Le Mouël, Bodirsky, & Rolinski, 2019).

Past studies have indicated people more often than not will alter their beliefs rather than their behaviors, simply because it is easier and allows for the dissonance to be alleviated much more quickly, especially in the case of animal consumption (Bastian, Loughnan, Haslam, & Radke, 2012; Milford et al, 2019; Bratanova, Loughnan, & Bastian, 2011). Therefore, rather than discontinuing consumption altogether, people will instead just change their thoughts related to animals and animal products (Cornish et al, 2016). The aforementioned studies evaluated groups of people who ate meat (carnivores and omnivores) in comparison to groups that followed plant-based diets (vegans, vegetarians, and subgroups); research has not yet focused on consumers who practice plant-based diets but still consume animal products like dairy and eggs in order to study the potential for cognitive dissonance, along with methods of dissonance reduction. Therefore, this study's purpose is to fill this gap and provide a foundation for evaluating the potential for misalignment between actions and beliefs through evaluating diet choice. Specifically, the inconsistencies that may occur even in diets that are plant-based.

Comparing Vegans and Vegetarians

Vegans

Vegan diets do not consist of any animal products, whether meat, dairy, eggs, seafood, honey, or gelatin. Overall, a vegan diet eliminates both the direct products and

the byproducts of living organisms (Saunders, 2014). Those who adopt veganism often see it as a lifestyle rather than a diet and implement the principles of kindness and empathy into all facets of life (Radnitz, Beezhold, & DiMatteo, 2015). Advocacy for animal rights is often seen as those who support veganism typically detest zoos, aquariums, horse racing, rodeos, animals used for transportation, and other uses of animals for entertainment or exploitative purposes (Allen et al., 2000). Past studies have hypothesized that those who follow a primarily plant-based diet may be more likely to abandon the diet in future and may be more open to animal agriculture than someone who adopts the vegan diet with the perspective that it is a lifestyle (Braunsberger & Flamm, 2019; Allen et al., 2000; Rosenfeld, 2019). Furthermore, those who pledge to eliminate animal harm and suffering in all areas of their life tend to be more altruistic and will maintain the diet indefinitely for the sake of the animals, even at cost to oneself (Bilewicz, Imhoff, & Drogosz, 2011). Therefore, veganism does not purely involve the elimination of the consumption of animals and their products. The practice of veganism also eliminates the usage of all animal products, even those that are not food-related. Typically, someone who is vegan will not use animal products at all, or products that have been tested on animals, whether cosmetics, clothing, cleaning products, or medications. In addition, they do not support or contribute to companies or industries that exploit animals or use their products (Braunsberger & Flamm, 2019).

Speciesism, or exhibiting favoritism toward a specific species and viewing one as better than another, is common among vegetarians and meat eaters. Typically, this is found in the idea that it is wrong to eat companion animals (dogs or cats) but it is okay to

eat farm animals (cows, chicken, pigs) and their products (Povey et al, 2001). In past studies, vegans have shown the lowest levels of speciesism among other groups like vegetarians and meat eaters, aligning with their common longing for equality among people and all animals, regardless of size or kind (Cliceri, Spinelli, Dinnella, Prescott, & Monteleone, 2018). Vegans do not see animals as different than humans, furthermore they do not see the desires or enjoyment of humans as worthy of animal suffering. They view all animals in the same way whether insects, birds, rodents, etc. They recognize animals have the capacity to suffer and experience pain, both physically and emotionally (Kolbe, 2018).

Vegetarians

On the other hand, vegetarians do not consume meat or seafood, but still consume other food and beverages derived from animal products. These include dairy products, eggs, gelatin, or honey. In addition, there are many vegetarian subgroups, like pescatarians, lacto-vegetarians, and lacto ovo-vegetarians. Pescatarians do not eat meat products, but will eat seafood. The second group does not eat eggs, but consumes dairy products like milk, butter, cream, yogurt, and cheese. Lastly, lacto ovo-vegetarians consume eggs and dairy (Rosenfeld, 2018).

It is known those who consume meat are consuming animal products that result from the death of an animal. In order to eat meat, an animal must be slaughtered. What is not known to a large degree is the harm that can still be caused by dairy. Those who follow a vegetarian diet are consuming animal products that do not necessarily require an animal to die in all cases, but still may contribute to an environment of maltreatment and

exploitation for the animals involved. Some research has even recognized the dairy industry as being just as, if not more harmful than the meat industry (Fox & Ward, 2008). Throughout the meat production process, an animal goes through pain and suffering, but it is eventually put to an end once the animal is slaughtered. In the case of dairy and egg production, a cow or chicken is undergoing a continuous, forced reproduction cycle, separation from offspring, and less than humane living conditions. Animals used for dairy and eggs are used for as long as possible (profitable), and are killed when they can no longer produce offspring or milk (Rosenfeld & Burrow, 2017). Although a vegetarian may be unaware of this reality, support is being handed to the dairy industry through the continued consumption of its products. Some are simply unaware of how animals can be harmed if they are not directly killed, others may have the mentality that giving up meat is better than not giving up any animal product at all. However, research has cited instances of the transition from a vegetarian to a vegan diet due to the accumulation of new knowledge regarding animals and their suffering related to a diet that still relies on them (Janssen, Busch, Rödiger, & Hamm, 2016). Then again, many studies show that attitudinal changes are often made instead of behavioral ones simply because behavior change requires more effort and may be a harder and lengthier method utilized to obtain relief (Bastian et al., 2012).

Many consumers state that they buy “cage free” or “free range” eggs, as well as organic products in order to alleviate animal suffering and obtain more ethically sourced products. However, there is a lack of regulation from the FDA when it comes to labeling and it is hard for consumers to know for sure where their meat actually originates as well

as how the animal was treated in the timeframe leading up to the slaughter (Kolbe, 2018). Additionally, it is hard to determine with certainty that any product of an animal can ever be considered truly cruelty free and humane (Rosenfeld & Burrow, 2017). As sentient beings, animals may undergo distress and pain unbeknownst to humans throughout the process of slaughter or milk production.

Overall, the main difference between a vegan and vegetarian diet comes from what animal products are deemed acceptable for consumption. Vegans do not consume any animal products, while ridding the use of animal products in all other facets of their lives. Thus, they avoid any and all forms of animal usage. Vegetarians still consume products that are derived from animals, like eggs, milk, cheese, gelatin, and whey. In addition, they may also still use household products that contain animal ingredients. So, vegetarians see the selective consumption and usage of certain animal products as acceptable (Povey, Wellens, & Conner, 2001).

Another difference between the two diets is found in the consumption of honey. While beekeeping and honey production may seem harmless, bees are actually forced into overproduction and are artificially inseminated. To keep bees from escaping, their wings or legs are often clipped as well (Saunders, 2014). The issue with dairy is that the male chicks are disposed of, and often ground up while still alive because they are not able to grow and lay eggs like the females. Chickens are also inbred often for desired traits. Eggs are marketed as great protein sources but in reality have no fiber and are high in cholesterol and fat (Thorning et al., 2016). Gelatin is found in a lot of gummy candies, vitamins, supplements, marshmallows, Jell-O, and even some wines. Gelatin is made

when bones, ligaments, tendons, and skin are boiled down and used as binding agents (Bratanova et al., 2011). However, a vegan seaweed alternative, agar-agar is available. As noted, with all non-vegan products, a vegan alternative does exist, but it still comes down to the choice and preference of the consumer.

Motivators for Adopting Plant-Based Diets

There are many cited reasons for the adoption of vegan and vegetarian diets including environmental, ethical, health, religious and cultural considerations. Studies have found that more often than not, the vegan or vegetarian choice boils down to a mix of several different factors rather than just one (Rosenfeld, 2019). Some studies have even found that appearance of an animal can also affect how a person feels about consuming its products, such as how cute it is. In addition, the levels of empathy, anthropomorphism, moral concern, and caretaking attitudes of the consumer may also influence diet orientation (Zickfeld, Kunst, & Hohle, 2018).

Physical health. When it comes to plant-based diets Thorning et al. (2016) cites concerns for deficiencies including protein, iron, B12, and zinc. However, diets filled with intention and awareness can completely fulfill all nutritional needs, leaving no room for deficiencies or compromised health. In fact, diets that stray from meat have been linked to lower BMIs, risks for heart disease, and diabetes (Melina et al., 2016). Many consumers of vegetarian or vegan diets often name the health benefits as a contributing factor to their choice to implement it. A studied explicitly studied vegetarians and vegans who adopted their diets specifically for health reasons and benefits. Overall, almost 76 percent of participants used a vegan or vegetarian diet for general wellness or disease

prevention, while over half of participants also used it for improved energy and immune function. More than half also indicated that their diet motivated them to eat healthier, more organic foods. Plant-based diets also led to stronger senses of control over one's life, better emotional health, and health improvement as a whole in comparison to omnivorous ones. The most common conditions the diets treated or improved were high cholesterol, hypertension, obesity, and hypoglycemia. Vegan and all categories of vegetarian diets were also associated with good health behaviors like balanced meals, regular exercise and not smoking (Leggio et al., 2019).

Health risks associated with animal product consumption include coronary heart disease, stroke, type 2 diabetes, obesity, and a variety of cancers. These risks are becoming widely identified and appreciated by the scientific community and general public. Red meats have been categorized as carcinogens, or cancer-causing agents. In addition, a diet that is rid of dairy and meat leaves no room for any dietary cholesterol. Dietary cholesterol can only come through the consumption of meat or dairy (Lütjohann, Meyer, Bergmann, & Stellaard, 2018). Studies have also cited the reversal of certain diseases and health conditions, like chronic ones when patients switched from meat-based diets to plant-based ones. With plant-based diets, the usage of medications as treatment may also be lessened or even eliminated altogether (Cramer et al., 2017).

Psychological health. With the knowledge a person is helping the environment, reducing the suffering of animals, and working toward good health, good psychological health may follow (Filippi et al., 2010). On the contrary, the recognition that one is not acting according to their beliefs may lead to cognitive dissonance or the misalignment of

one's actions and beliefs. This misalignment creates a discomfort and anxiety in which some form of relief is sought. In order to obtain this relief from distress, a person is faced with the decision to change one of the aspects that is out of line (behavior or cognition). The change made allows for the restoration of comfort, along with the realignment of the thoughts and actions that were originally contradictory (Aronson, Wilson, Akert, & Sommers, 2016). Along with altering a belief or behavior, cognitive dissonance can be reduced if a person chooses to create a new thought instead. Due to this, people will often deny or distort reality. They may behave illogically and alter information so that it is in favor with what they believe in (Aronson et al., 2016). This distortion allows people to feel better about themselves and their decisions, it relieves them of the stress, anxiety, discomfort, and guilt they are experiencing. When a person changes their thoughts in order to avoid behavioral change, the relief from distress is only temporary as something will cause the misalignment to be confronted again. However, making the choice to create actions and beliefs that are equivalent will leave a person at peace with the recognition of their consistency. Therefore, cognitive dissonance may in some cases encourage consumers to turn to a vegan or vegetarian diet if behavioral change is sought, allowing attitudes and actions to coincide (Cliceri et al., 2018).

Environment. Environmental components affected by diet include global warming, resource depletion, planet health, and ecological balance. The production of meat affects and elevates greenhouse gas emissions. Methane gas is produced by cows so recommendations by environmentalists are aiming in the direction of meat reduction (Kolbe, 2018). Meat production also requires large amounts of water usage in

comparison to crops. For example, one pound of meat requires almost 2,400 gallons of water, whereas wheat production only requires 25 gallons. As for dairy, a pound of cheese requires 900 gallons of water and the production of a gallon's worth of eggs uses almost 480 gallons of water (Rosi et al., 2017). For these reasons, many who adopt a vegan or vegetarian diet do so for the sake of protecting and helping the environment (Janssen et al., 2016).

Religion. Buddhism, Seventh-Day Adventism, Hare Krishna, and Jainism all completely avoid animal products, or at least meat as part of the religious practice (Thomas, 2016). Other studies have noted avoidance of animal products in pet food is also common among some households whose owners practice vegetarian and vegan diets. Vegan pet foods have recently exploded in the market to solve the moral dilemma vegan or vegetarian owners may face when feeding their pets animal products (Dodd et al., 2019). Jainism is also noted for refraining from causing suffering to anything. It is centered on beliefs of nonviolence. Those who practice this religion will not even consume any meat or even a root vegetable since they grow from the ground and are believed to have lives within them. The consumption of eggs is prohibited, but milk is still allowed (Milford et al, 2019).

Ethics. Ethical vegans when compared to health vegans showed lower levels of speciesism. They also were willing to eat meat cruelty-free meat substitutes but not lab grown meat because it was not said to be completely free of cruelty due to potential usage of blood from mice (Rosi et al., 2017). Health vegans were less likely to eat meat substitutes because most tend to be highly processed, but were ready to consume lab

grown meats because of claims of it being clean. In addition, health vegans indicated less concern when it came to animal testing on cosmetic and household hygiene products.

The same went for clothing sourced from animal products. In addition, ethical vegans expressed a longing for equality among all social groups in their societies, which is then translated to their feelings regarding animals and their rights (Radnitz et al., 2015). The primary goal of ethical vegans is equality among all humans and species in addition to the elimination of their slaughter, suffering, and cruelty. The health and environmental benefits that also follow a vegan diet are just another added benefit, coinciding with the primary concern being the quality of life for animals (Braunsberger & Flamm, 2019).

Vegetarians also frequently reference ethical motivations for giving up the consumption of meat, as they see the consumption and production of meat as morally wrong (Rosenfeld, 2019). However, they differ in the fact they still consume some animal-derivatives, so vegans are taking ethics a step further through eliminating the consumption of any animal products (Rosenfeld & Burrow, 2017).

Culture. Choosing to consume animals and their products may rest in traditions and cultures that a person is raised in. Certain families may have grown up on farms, raising their own animals for food purposes or hunting their own meat. Others may be used to eating certain animals for holidays and celebrations. Sometimes turning from a culture or tradition is insulting to ancestors. A person may comply with tradition to avoid offending family members or being seen as rebellious or deviant (Thomas, 2016).

Animal Testing. Another topic of debate is the use of animals for research and experimentation. While there is nothing wrong with simply observing or monitoring an

animal, a lot of labs will remove beaks, tails, teeth, and even vocal cords of animals because they self-mutilate due to the boredom and distress experienced in the environment (Radnitz et al., 2015). Many companies will test products on animals' skin and eyes, causing burns and blindness. To date, Harvard, Yale, and Stanford no longer use animal labs. Instead, cell research, clinical studies, computer modeling, and epidemiological research are used, especially among veterinary practices (Rosenfeld, 2018). Although the idea of using humans instead of animals for research is not necessarily celebratory, one could argue that testing on humans rather than animals would yield more accurate and beneficial findings. Drugs have still been marketed despite have negative or even fatal effects on animals (Fox & Ward, 2008).

Barriers to Adopting Plant-Based Diets

Since vegetarians never completely eliminate animal products from their diet, a strong enough aversion may never be developed and therefore, contributes to the temptation to continue consuming dairy. In addition, because dairy does not involve the living flesh or slaughter of an animal, there may be a disassociation between the food product and the potential suffering that the animal producing it experienced (Fox & Ward, 2008). Ignorance (both willful and unintentional) plays a large part in diet as many consumers see nothing wrong with their diet and therefore may never seek out alternatives or modifications to begin with. On the other hand, some consumers may be aware of flaws in their current diets but may lack the motivation or discipline to implement any lasting changes (Graça, Truninger, Junqueira, & Schmidt, 2019). Several

barriers have been studied in relation to the adoption of plant-based diets as well as giving up the consumption of animals and animal byproducts in general.

Perceived Masculinity. Studies in the past have also addressed the association between masculinity and meat consumption. A study by Thomas (2016) found that vegetarian diets are also associated with raised masculinity levels due to the fat content in dairy and eggs. Therefore, vegetarians are not seen as less masculine than omnivores or carnivores. It was also found that omnivores and carnivores considered vegetarians to be similar to themselves, counting them as an in-group, but did not see vegans as similar to themselves. Perceptions of vegans as less masculine were elevated when it is out of free will rather than for reasons such as lactose intolerance or allergies to meat hormones, or other health conditions that might warrant a vegan diet over a vegetarian, carnivorous, or omnivorous one.

Denial of Animal Mind. A study conducted found consumers attributed lower mental capacities to animals frequently consumed when compared to animals commonly kept as pets. Vegetarians and omnivores rated dogs, cats, elephants, and dolphins as more mentally capable than cows, sheep, fish, goats, chicken, and deer. In addition, when the connection between animal suffering and animal consumption was emphasized, consumers again tended to diminish the mental capacity of the animal in order to alleviate experienced guilt. Lastly, participants were asked to think about the origins of meat and animal products before being asked to sample them. Once again, participants diminished the mental capacities of the animals whose byproducts and flesh they were then

instructed to eat. Overall, participants denied mind to animals in order to reduce the negative affect associated with the dissonance experienced (Bastian et al, 2012).

Human Alikeness. Perceptions held regarding how similar animals are to humans can impact the willingness to consume them. The more different animals are perceived to be, the less concern humans attribute to their death and suffering. Some may view humans and animals according to a hierarchy in which humans remain dominant, whereas those who see animals as more similar to humans are more likely to attribute human experiences and characteristics to those of animals (Melina et al., 2016). Loughnan, Bastian, and Haslam (2014) found animals commonly used for slaughter were seen as the most different from humans and therefore were seen as less likely to experience pain and less worthy of moral concern. In addition, the idea of these animals suffering led to less of an emotional reaction when compared to responses related to animals perceived to be more human-like.

Disassociation between Meat and Animal. Many consumers tend to avoid the acknowledgement of animal suffering in relation to the origin of animal products and food. They will actively avoid seeking out knowledge that could have negative insinuations regarding animal consumption. Another method pertaining to ignorance is disassociating food products from the animals they came from. For example, rather than being called a cow or pig, food is called pork or beef. Some may even refer to chicken as animal “units” that are grain consumers. Furthermore, simply categorizing and deeming animals as food alone allows responsibility of an animal’s suffering to be removed

completely. This is also a common occurrence in people who hunt animals in order to reduce any associated discomfort (Bratanova et al, 2011).

The Current Study

For the current study, vegans and vegetarians were utilized exclusively in order to address the gap in the literature. As stated, past studies have compared plant-based diets to carnivorous and omnivorous ones, but subcategories of plant-based diets have never been separated and compared exclusively. Participants were given anonymous surveys where they reported whether they consumed any meat, seafood, eggs, or dairy. Data from participants who indicated the consumption of meat or seafood were excluded as they did not meet the study criteria. Those who indicated consumption of dairy and eggs were counted as vegetarians and those who did not eat any dairy products or eggs were counted as vegans. Some studies warn against the separation of different types of vegans (ethical, health, environmental) because the motivation driving a vegan diet may be a result of more than one sole aim. In regards to vegetarians, many may also delineate between dairy and egg consumption since there is a lack of commitment to a vegan diet (Rosenfeld & Burrow, 2017). Therefore, vegans and vegetarians were considered and studied for the sake of exploring their current diets and related beliefs, not necessarily motivations regarding the implementation of their diets. In addition, the two groups were not further divided or categorized for analysis outside of being considered either vegan or vegetarian.

Past research findings support the holistic style of a vegan diet which maintains the desire and goal to eliminate the cause of suffering to any living being in all areas of

one's life (food, clothing, entertainment, etc.). Contrarily, the vegetarian diet still incorporates the consumption of animal products like dairy and eggs, so even if the goal is to eliminate suffering through the elimination of meat, the goal cannot be achieved on a holistic level as long as animals and their products are still being consumed. Therefore, the hypothesis was that a difference would exist between vegetarians and vegans.

Research Questions

1. Does a difference between vegetarians and vegans exist regarding moral decision-making?
2. Does a difference exist between vegetarians and vegans regarding attitudes toward animal rights?
3. Does a difference exist between the beliefs of vegetarians and vegans regarding equality between animals and humans?

Methods

Participants

This study included undergraduate and graduate (online and residential) students at a large Christian university in Central Virginia. These students were at least 18 years old and practiced either a vegetarian or vegan diet. Twenty-three participants were male and 77 were female, with ages ranging from 18 to over 40 years old ($\text{Mean}_{\text{age}} = 20.6$; $\text{SD} = 2.09$). Seventy percent of participants identified as White, 15% identified as African American, 11% identified as Asian, and 4% identified as "other" (see Table 1).

Participants completed surveys to assess demographics, morality, along with attitudes and perceptions toward animals and their usage. Surveys were distributed online through

Qualtrics using an anonymous link so participant identities could not be known. Consent information was provided on the first page of the survey after clicking on the link before access was granted to the remainder of the survey.

Table 1

Demographic Breakdown of Sample

	Characteristic	Frequency	Percentage
Gender	Male	23	23.0
	Female	77	77.0
Ethnicity	White	70	70.0
	African American	15	15.0
	Asian	11	11.0
	Other	4	4.0
Diet	Vegan	50	50.0
	Vegetarian	50	50.0

Procedure

This study was approved by the university's institutional review board before survey distribution and data collection took place. Surveys were completed by 100 participants. Quotas were set on Qualtrics to cease survey response collection once there were responses collected from 50 vegetarians and 50 vegans to allow for a balanced design to decrease the possibility of violating any test assumptions and threatening the test validity. Prior to analysis, 27 responses were excluded because they did not meet criteria (persons were either under 18 years of age, or ate meat/seafood). Quota sampling

was used as it allowed for an equal number of participants in order to make comparisons. Snowball sampling was also used due to low incidence cases of vegan and vegetarian diets. After receiving permission from the appropriate administrators, recruitment flyers were posted throughout campus in various academic buildings, student unions, dining locations, as well as the library. Announcements were also posted on social media (Facebook and Instagram) using an IRB-approved recruitment flyer.

A demographic questionnaire was included in the beginning of the survey. Variables such as gender, class, relationship status, ethnicity, and age. This section was also utilized to group vegetarians and vegans. Participants were asked whether they consumed meat or dairy. Those who did not consume any form of meat or dairy were marked as vegan, those who indicated they consumed dairy or eggs but not any form of meat were marked as vegetarian. Skip logic was used to end the survey for those who indicated they ate meat, were under 18, or were not students at Liberty (did not meet the criteria). These responses (27) were removed prior to analysis.

Measures

Moral Foundations Questionnaire (MFQ). The Moral Foundations Questionnaire (MFQ) assessed the degree to which participants prioritized the five foundational domains that play a role in moral decision-making: Harm/Care, Fairness/Reciprocity, Ingroup/Loyalty, Authority/Respect, and Purity/Sanctity. Cronbach's alphas for the total scale score ranged from .74 to .76. There were 30 statements separated into two parts with 15 questions each, in which participants had to rate the relevancy of the statement to their consideration and thought process when

distinguishing right from wrong. Three related statements were pulled from each part of the survey (1 and 2) and totaled in order to generate the subscale scores for each of the five domains. The following was the ranking scale used: “[0] = not at all relevant (This consideration has nothing to do with my judgments of right and wrong), [1] = not very relevant, [2] = slightly relevant, [3] = somewhat relevant, [4] = very relevant, and [5] = extremely relevant (This is one of the most important factors when I judge right and wrong)”. Participants had to rank the importance and relevance of harming defenseless animals, caring for the weak and vulnerable, violating God’s standards, emotional suffering, and compassion in relation to making the choice regarding whether or not something is moral or immoral. Higher scores for each item and domain indicated that the participant assigned a greater level of importance to the item in their moral decision-making process (Graham, Haidt, & Nosek, 2008).

Animal-Human Continuity Scale (AHCS). The Animal Human Continuity Scale (AHCS) consisted of 12 items, with a Cronbach’s alpha of .70. This scale was used to assess how similar participants perceived animals to be to people, superiority status, and declared differences between themselves and animals. A 7-item Likert scale was used for scoring, ranging from strongly agree to strongly disagree. Scores were reversed for items 1, 2, 3, 7, 9, 10, 11, and 12. Sample items included whether animals have a soul, can think, are afraid of death, and if they have an afterlife. Higher scores were indicative of an increase in perceived similarity between humans and animals (Templer et al., 2006).

Animal Rights Scale (ARS). The Animal Rights Scale (ARS) was used to assess attitudes related to the rights of animals and acceptance or reluctance associated with animal use in research. The ARS had a Cronbach's alpha of .91, and consisted of 28 items with a 5-item Likert scale with responses ranging from strongly agree (1) to strongly disagree (5). Items addressed were topics like wearing leather, wearing fur, destruction of animal habitats, the role of hunters, morality of eating dairy and meat, the necessity of animal research, and whether the various uses of animals are justifiable. On items 1-15, 17, 18, 20, 22, 23, and 25-27, a higher score indicated higher agreement and support of animal rights. Scores on items 16, 19, 21, 24, and 28 were reversed, with lower scores indicating the participant is a supporter of animal rights (Wuensch, Jenkins, & Poteat, 2002).

Results

An independent samples t-test was conducted using SPSS to compare the means of vegan and vegetarian diets on measures of moral foundations, attitudes toward animal usage, and perception of equality between animals and humans. As hypothesized, there was a significant difference between the scores for vegan diets ($M=109.44$, $SD=15.40$) and vegetarian diets ($M=70.16$, $SD=10.15$) on attitudes toward animals; $t(98) = 15.06$, $p < .001$, as well as vegans ($M=63.64$, $SD=5.25$) and vegetarians ($M=39.18$, $SD=6.12$) on animal-human continuity $t(98) = 21.45$, $p < .001$, and the vegan ($M=19.78$, $SD=2.44$) and vegetarian ($M=21.04$, $SD=3.05$) groups on the fairness/reciprocity dimension of moral decision-making; $t(98) = -2.28$, $p < .05$. These results suggest that a difference does exist between vegans and vegetarians. Specifically, vegans and vegetarians share

different attitudes toward animals and their usage, perceptions regarding equivalence of animals and mankind, and their moral foundations for decision-making related to fairness. A significant difference was not found between the means of the vegan and vegetarian diet groups in the following subscales of the MFQ: harm/care, in-group/loyalty, authority/respect, and purity/sanctity. Effect sizes for attitudes toward animals and animal-human continuity were extremely large, while the effect size for the fairness/reciprocity foundation was small (see Table 2).

Table 2

t-test Results Comparing Vegans and Vegetarians on Attitudes toward Animals and Moral Foundations

	Vegetarian		Vegan		<i>t</i> -test	Cohen's <i>d</i>
	M	SD	M	SD	<i>t</i> (98)	
Animal Attitudes	70.16	10.15	109.44	15.40	15.06*	3.0
Animal-Human Continuity	39.18	6.12	63.64	5.25	21.45*	4.2
MFQ: Total Score	98.30	11.33	95.22	6.34	-1.68	0.3
MFQ: Harm/Care	21.98	3.30	22.16	2.49	0.31	0.1
MFQ: Fairness/Reciprocity	21.04	3.05	19.78	2.44	-2.28**	0.4
MFQ: Ingroup/Loyalty	17.28	3.70	16.06	2.57	-1.92	0.3
MFQ: Authority/Respect	18.52	4.25	17.30	2.80	-1.69	0.3
MFQ: Purity/Sanctity	19.48	3.41	19.92	2.55	0.73	0.1

* $p < .001$ ** $p < .05$

Discussion

As hypothesized, a statistically significant difference did exist between the vegetarian and vegan diet groups on attitudes toward animals and animal-human continuity. In addition, there was a significant difference between the two groups on the fairness/reciprocity dimension of the MFQ subscale scores. However, there was not a statistically significant between vegan and vegetarian groups overall regarding the moral foundation dimensions of harm/care, in-group/loyalty, authority/respect, and purity/sanctity. Therefore, vegetarians and vegans differ in their perception of human

and animal equality, attitude regarding animal rights, and foundations for moral decision-making related to fairness and reciprocity. Specifically, those who follow a vegan diet are more likely to see animals as more similar to people (themselves), oppose the testing of animals and their use for research, disagree with wearing leather, see meat, dairy, and egg consumption as immoral, and based decisions of what is moral or not on if someone or something was treated fairly, and in a reciprocal manner. These results could lead to more insight regarding alternative diets and indicate the need for a separation between them in future studies.

Findings were consistent with previous studies in terms of suggesting measures of those who practice vegan and vegetarian diets may have more positive and protective attitudes regarding animals when compared to those who do not (Povey et al., 2001; Thomas, 2016; Braunsberger & Flamm, 2019). In addition, those who do not consume animals tend to see animals as more similar to themselves and human beings in general (Bilewicz et al., 2011; Filippi et al., 2010). However, an exclusive contrast between vegan and vegetarians was not obtained in the literature since these diets were grouped together in any studies that were previously conducted. Therefore, this study fills a significant gap in the literature through separating vegans and vegetarians in order to directly compare and contrast them to see if there was a difference in their attitudes regarding animals, their usage, similarity, and relevance to moral decision-making. Current findings suggest these two diets may be more different than literature might portray. There is already a noted difference in the consumption habits of each diet and their definitions; vegans have eliminated any and all animal products from their diet,

while vegetarians still continue to consume some animal products (Cliceri et al., 2018). Now, it is worth exploring more regarding a difference not only between dietary habits and what defines them, but between the attitudes of those who practice these diets as well.

Overall, this study allowed for the consideration of discrepancies between a vegan diet and vegetarian diet. This can help with the decision making process when it comes to diet. In addition, this study fulfilled a gap in the literature as any studies that exist between vegans and vegetarians are mainly comparing and grouping them, not seeking to identify differences. Just as there is a difference between a carnivorous and omnivorous diet, it is important to maintain the separation of vegan and vegetarian diets although similarities can still be acknowledged.

Limitations and Future Research

This study was self-report, banking on the honesty of the respondents, which can never be guaranteed. Furthermore, the measures used in this study were assessing the attitudes of the participants, not their actual behaviors. Therefore, participants could have reported specific beliefs without necessarily possessing the behavioral consistency in their actual lives. In addition, convenience sampling was used which adds to sampling bias (Bilewicz et al, 2011). The population was also mainly female (77%) and all participants were from a large Christian university in central Virginia, limiting the generalizability of the findings. The demographic portion of the survey did not evaluate religion of the participants, so a future study could potentially evaluate religion (Christianity) in relation to vegan and vegetarian diets.

Recommendations for future research primarily consist of maintaining a separation between all subcategories of plant-based diets since past research has grouped them all together as one. In addition, replicating past studies with this new separation could yield interesting results and explore more regarding the potential for the existence of cognitive dissonance in vegetarians, and even vegans who lack consistency or a holistic approach in their diets. Continued research regarding barriers to the adaptation of plant-based diets along with components that could potentially contribute to inconsistency or the eventual relinquishment of plant-based diets could serve as insightful. In addition, findings can be utilized for advocacy and marketing purposes when looking at how to spread awareness and accurate information on health, diet, and animals.

Implications

Findings of this study could be useful to consumers who are not familiar with plant-based diets, as well as ones who are as it gives a comprehensive examination of the main components and motivations regarding a vegan and vegetarian diet. Furthermore, it emphasizes the differences between vegans and vegetarians rather than similarities, which past literature has not yet done. The findings could be beneficial for health purposes, or simply to allow people to examine their own diets and possible inconsistencies in their own life.

Ultimately, one must make a decision to partake in whatever diet best suites their life, desires, beliefs, and palate. Even more than that, one's actions should be a reflection of their beliefs. Whether a person follows a diet that is vegan, vegetarian, pescatarian, or

omnivorous, it should be consistent with what is right for them and their body.

Becoming knowledgeable of all facets of a specific diet or lifestyle can help eliminate the potential for inaccurate assumptions or biased information. Only once all knowledge is acquired can one fully, accurately, and comfortably come to a conclusion regarding the best diet and lifestyle to follow personally.

It can be argued because humans are imperfect, no one will ever achieve a full and perfect alignment between their actions and beliefs. Humans make mistakes, are tempted, troubled, and inconsistent. Hence the existence and dilemma of cognitive dissonance. However, the examination and reconsideration of the actions and beliefs in a person's life can bring forth clarity and reveal areas where improvement may be needed. In addition, people cannot be blamed for not knowing what they do not know. Through growth comes increased knowledge, understanding, and most importantly, change.

This study is not meant to ridicule or recommend one diet over another, but to provide information in circumstances where differences may exist and people may be going against their beliefs without even knowing it. The importance of discernment is emphasized along with a willingness to seek out truth and knowledge before embodying any beliefs or claims. Lastly, the benefits of fully embodying held beliefs in a holistic and consistent manner, in which actions and cognitions are aligned, can be reasoned.

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