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Discrepancies amongst UTC students' diets and their understanding of their role in environmental activism

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Abstract

The present research attempts to analyze why university students claim a love for the outdoors but do not use means of dietary action to protect the environment. Through an extensive analysis of corresponding literature, the effects of gender, age, motivation, barriers, and attitudes are examined as they relate to diet. To obtain data regarding these effects, students enrolled in online or hybrid classes at University of Tennessee at Chattanooga (UTC) were sent a survey via Google Forms, with 129 students willingly responding. Previous to survey collection and statistical analysis, I hypothesized that if students rated their love of the outdoors at a high value, then they would be more likely to participate in environmental conservation by means of dietary action, demonstrating a positive correlation between love of the outdoors and restriction of diet. This speculation was not supported by students surveyed at UTC, as no significant correlation was detected between these 2 variables. A significant relationship between age and diet was confirmed by the data, reflecting previous studies that highlight the complex nature of this association. Lastly, no significant relationship was found between gender and diet, which conflicts the thoroughly established positive correlation between females and vegetarian dieting.

Discrepancies Amongst UTC Students' Diets

and Their Understanding of Their Role in Environmental Activism

Introduction

Over the past decade, initiatives to address human impact on the environment have increased across the globe. While some have the opportunity to engage in full-time activism, others seek ways to engage in personal activism, by making individual changes in their habits (Laessoe, 2018, p.2). The literature reveals both the personal and global benefits of vegetarianism. For individuals who avoid eating meat, the decrease in saturated fat and cholesterol associated with meat can lead to a reduced risk for several chronic illnesses (Vanderly, Campbell, 2006). Regarding the environment, a vegetarian diet is related to a reduction of global warming, avoidance of excessive carbon dioxide production, saving of water, avoidance of pollution, and countless other benefits as compared to a diet that includes meat (Godfray et al., 2018).

Despite its increasing importance and prevalence, vegetarianism is notoriously difficult to study, a challenge seen throughout its research history. The definition of vegetarianism itself is commonly misunderstood, with some scholars even requesting the removal of the term's use in scientific literature (Weinsier, 2000). For this study, "vegetarians" are defined as those who avoid all meat consumption, which includes poultry, red meat, and seafood. Results of a 2018 survey

show that 5% of respondents in the United States considered themselves vegetarian, while 3% considered themselves vegan (Statista Research Department, 2021), meaning that no animals or animal byproducts are consumed (i.e. eggs and dairy). While the vegetarian and vegan populations do represent a minority, these diets are becoming increasingly more popular due to both innovation in the plant-based industry and increased awareness of issues around animal agriculture; thus, vegetarianism stands as a predominant phenomenon that is worth further understanding and investigating on a global and local level.

Chattanooga has increasingly become a city of many environmentally-aware inhabitants, vegan restaurants, and natural attractions. While it seems that the population is generally passionate about the wellbeing of the environment, significantly less individuals appear to take action in order to preserve and take care of it. A clear disconnect exists between the intentions of Chattanooga residents to enjoy nature and their understanding of how their diet plays a role in protecting it. Why is this? Most importantly to this study, I sense that it is uncommon for many college students in Chattanooga to practice environmental activism by means of dietary action. Could this be a result of inconvenience, lack of proper education on the importance of these decisions, or something more difficult to identify?

In order to answer these questions and understand these relationships, I conducted an online survey of students at the University of Tennessee at Chattanooga (UTC). Before data collection, I hypothesized that if students rated their love of the outdoors at a high value, they would be more likely to participate in environmental conservation by means of dietary action, demonstrating a positive correlation between love of the outdoors and restriction of diet. By analyzing data obtained from UTC students and exploring variants of motives for specific diets,

the present research aims to investigate possible causes for the disconnect between intention and action.

Methodology

The survey included in this research prompted students to provide the following information:

· respondent's age, with categories of "18-20", "21-22", and "23+".

· respondent's gender, with pronouns category options of "He/Him", "She/Her", and "Nonbinary/ They/ Them"

· respondent's diet, with categories of "Non-vegetarian (I consume meat in my diet)", "Pescatarian (The only meat I consume is fish)", "I avoid fish and meat if possible", "Vegetarian (I do not consume any meat in my diet)", or "Vegan (I do not consume any animal products, including eggs and dairy)"[1], and

· respondent's rating of their love for the outdoors on a scale of 1 to 10.

The Google form survey allowed students to provide their consent and required that they be at least 18 years of age and currently enrolled in an online or hybrid course in order to participate. In order to share the survey with the maximum number of UTC online students, I contacted professors teaching online classes and shared the survey link with those willing to send the survey to their classes. I chose to survey students who were enrolled in online courses rather than students who were enrolled in face-to-face courses, because most in-person courses contemporary to my data collection process were in one of the STEM disciplines; therefore, online courses provided a more interdisciplinary pool to survey.

[1] The listed descriptions of diet were given in order to provide students clear and concise criteria for each option in the case of misunderstanding.

Results

There are several factors to consider in conversation with the data. First, it should be noted that survey responses were collected during a summer semester as compared to the fall or spring semesters. This results in a smaller population to study and draw conclusions from. Second, while professors agreed to make the survey available to their students, students independently chose to respond or not. Finally, not all students that began the survey completed it.

Demographics Surveyed: Age, Gender, and Diet

Figure 1: Reported Ages Amongst Participants

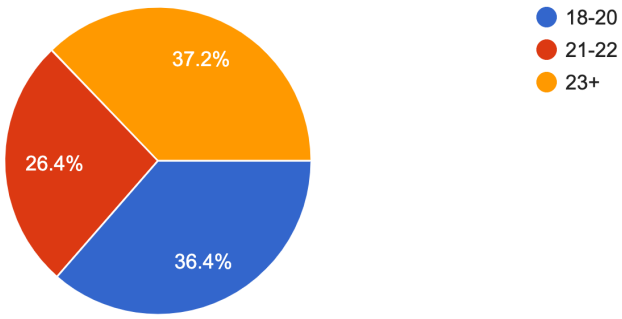
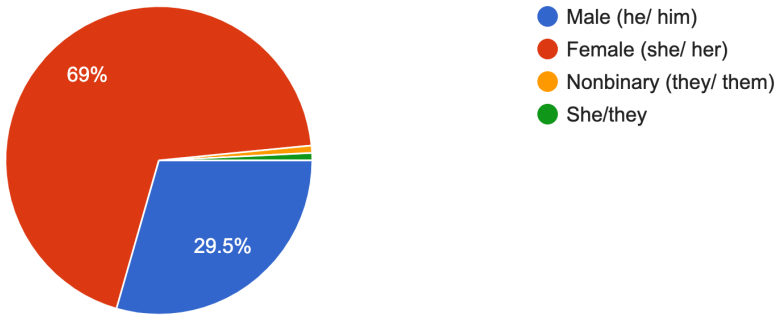
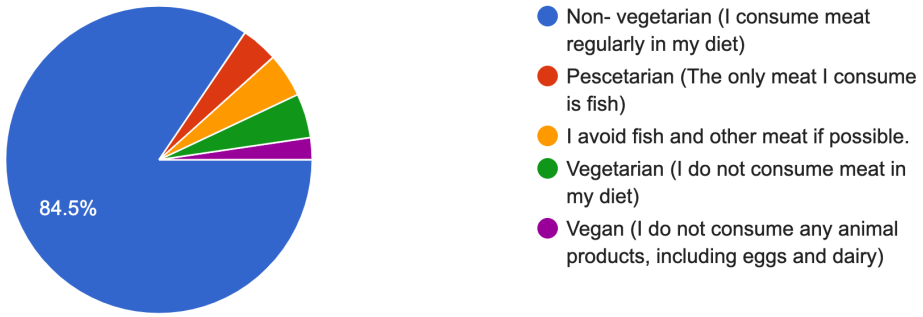


Figure 2: Reported Genders Amongst Participants



Most participants identified as female, composing 69% of responses. The remaining 29.5% represented male-identifying students, with the final 1.6% of students identified as neither gender provided. While I designed the survey to be inclusive of all gender identities, students identifying as non-binary were not included in data analysis due to low response rate of the population. Age groups were more evenly represented, with 36.4% students reporting ages between 18 and 20, 26.4% of students reporting ages between 21 and 22, and 37.2% of students reporting that they were 23 or older. *Figure 2* illustrates the genders surveyed.

Figure 3: Reported Diets Amongst Participants



Responses Collected: Rated Love of the Outdoors

Figure 4: Reported Love for the Outdoors Amongst Participants

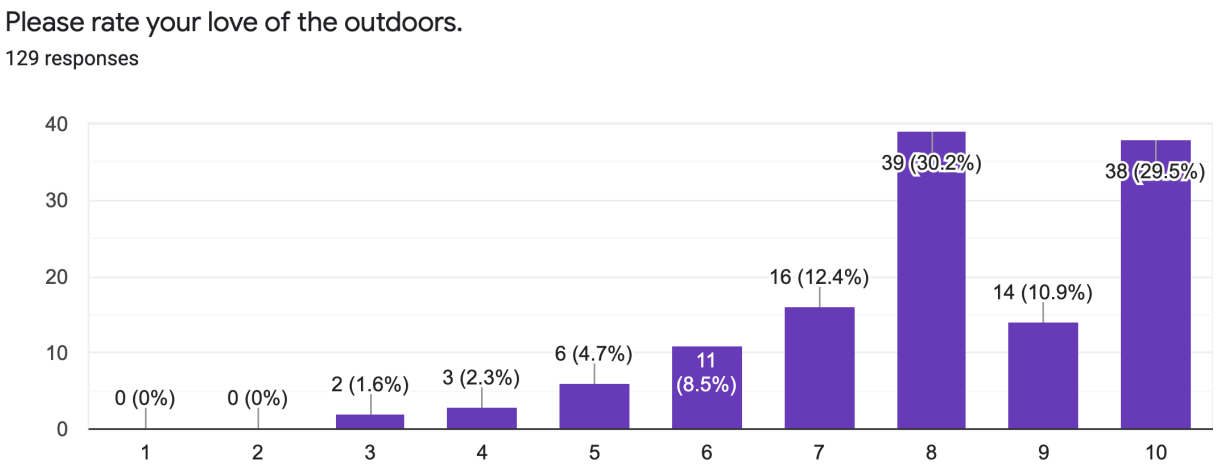
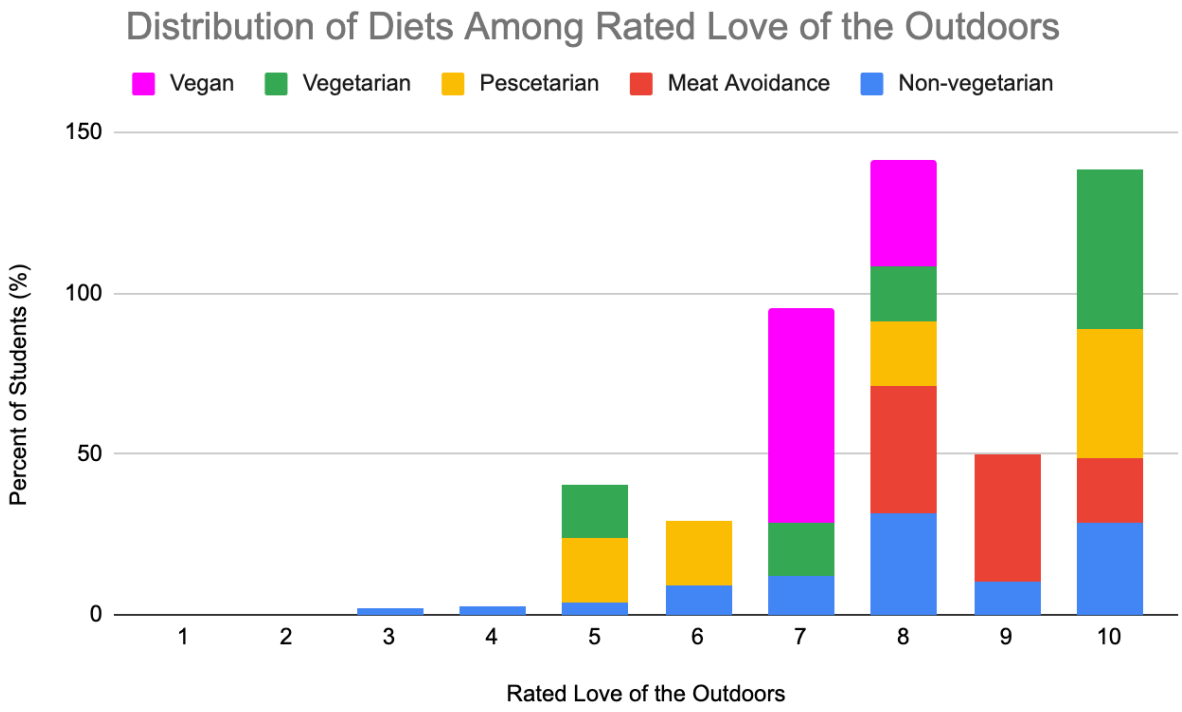


Figure 5: Distribution of Diets Among Rated Love of the Outdoors



Gender vs Diet

Table 1: Gender vs Diet: Percentage (number) of diets among genders

	Men 29.5% (N=38)	Women 69%, N=89	Other 1.6%, N= 2
Non-Vegetarian	89.5% (34)	83% (74)	50% (1)
Meat avoidance	0% (0)	5.6% (5)	50% (1)
Pescatarian	5.3% (2)	3.4% (3)	0% (0)

Vegetarian	5.3% (2)	4.5% (4)	0% (0)
Vegan	0% (0)	3.4% (3)	0% (0)

Previous research shows that women are far more likely to adopt a meatless diet (Ruby, 2012). Data collected in this survey demonstrates that men are slightly more likely to be vegetarian, with 5.3% of men surveyed reporting vegetarianism, compared to 4.5% of women (shown in *Table 1*). Using a z-test, I calculated significance between these values- the difference between the 2 population proportions is significant, rejecting the null hypothesis that the two proportions are the same. This data may be biased due to the sample sizes of each gender, with women participating more than men, allowing the two vegetarians out of 38 men surveyed to contribute to a higher percentage. In addition, it is important to recognize the total percent of non-omnivorous responses from each gender surveyed (including meat avoidance, pescetarianism, vegetarianism, and veganism); 17% of women and 10% of men reporting meat restriction in various degrees. According to the data provided by UTC students, no significant relationship exists between gender and diet ($\chi 2=3.817$, $p= 0.431 > 0.05$), failing to reject the null hypothesis.

Age vs Diet

Table 2: Age vs Diet: Percentage (number) of diets among age groups

	Ages 18-20	Ages 21-22	Ages 23+

	36.4% (N=47)	26.4% (N=34)	37.2% (N=48)
Non-Vegetarian	80.9% (38)	97.1% (33)	79.2% (38)
Meat avoidance	2.1% (1)	2.9% (1)	8.3% (4)
Pescatarian	2.1% (1)	0% (0)	8.3% (4)
Vegetarian	8.5% (4)	0% (0)	4.2% (2)
Vegan	6.4% (3)	0% (0)	0% (0)

Previous studies reveal complexities in the relationship between age and diet. These studies show that older people are more willing to participate in a more meatless or reduced-meat diet (Rimal, 2002), but that younger people are more likely to partake in a vegetarian diet itself (Pribis, Pencak, Grajales, 2010). The data collected from UTC students echoes this complexity, with vegetarians representing 8.5% of students between ages 18 and 20, compared to 0% of vegetarian students between ages 21 and 22, and 4.2% of students age 23 or older being vegetarian (shown in *Table 2)*. But once more, it is important to consider less omnivorous diets ranging in degrees of restriction. While vegetarians were most common between ages 18 and 20, 80.9% of students within this age range participated in a completely omnivorous diet, meaning 19.1% of these students restricted their meat consumption in some way, whether that be avoidance, pescatarians, vegetarianism, or veganism. Similarly, 21.8% of students ages 23 or older limited meat consumption, with this age group representing the highest population of students who do not participate in a limitless omnivorous diet. Meanwhile, only 2.9% of students between ages 21 and 22 restricted their meat consumption to some degree. Analysis of test

statistics supports a possible relationship between UTC student's age and diet ($\chi 2 = 17.674$, $p = 0.0238 < 0.05$).

Love of the Outdoors vs Diet

Table 3: Love of the outdoors vs Diet: Percentage (number) of rated love of the outdoors among diets

	1	2	3	4	5	6	7	8	9	10
Non-vegetarian	0% (0)	0% (0)	1.8% (2)	2.8% (3)	3.7% (4)	9.2% (10)	11.9% (13)	31.2% (34)	11% (12)	28.4% (31)
Meat avoidance	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	33.3% (2)	33.3% (2)	33.3% (2)
Pescatarian	0% (0)	0% (0)	0% (0)	0% (0)	20% (1)	20% (1)	0% (0)	20% (1)	0% (0)	40% (2)
Vegetarian	0% (0)	0% (0)	0% (0)	0% (0)	12.7% (1)	0% (0)	16.7% (1)	16.7% (1)	0% (0)	50% (3)
Vegan	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	66.7% (2)	66.7% (2)	0% (0)	0% (0)

The hypothesis developed for this study predicted that students who rated their love of the outdoors at a high value would be more likely to participate in environmental conservation by means of dietary action, demonstrating a positive correlation between love of the outdoors

and restriction of diet. The most commonly reported motivation given by vegetarians is of ethical concern, including moral dedication to animals and the environment (Beardsworth, Keil, 1991) (Fox, Ward, 2008) (Jabs, Devine, Sobal, 1998). Despite this common motivation, no significant relationship was established between love of the outdoors and diet amongst UTC students ($\chi 2 = 24.73$, $p = 0.922 > 0.05$). However, non-vegetarians were more likely to rate their love of the outdoors at a lower value, with 4.7% of nonvegetarian students reporting a rate below 5, compared to 0% of students reporting a rate below 5 amongst all other diets; vegetarians were most likely to report their love of the outdoors at 10 (refer to *Figure 5*).

Discussion

Vegetarianism and gender

Professional researchers and non-academic vegetarians alike recognize a connection between an individual's gender identification and their dietary habits.

There are multiple arguments suggesting a systematically established link between maleness and meat consumption. From an evolutionary perspective, meat is a product of hunting, which is culturally and historically a task of men in the West (Gurven, Hill, 2009). Meat is seemingly a symbol of power, toughness, and most importantly dominance over the natural world (Twigg, 1979), these features being most commonly attributed to men, making meat appear masculine. Meat consumption is also associated with physical strength and a muscular physique, masculinized characteristics that contribute to meat's position as a source of ideal nutrition. . Research suggests that meat, a preferred and limited resource, is appropriate for men in a traditionally male-dominated society (Rozin et al., 2011).

Recent corresponding literature suggests a metaphoric relationship between meat and maleness in Western cultures and supports this connection through quantifiable studies (Rozin et al., 2011). In this study, quantitative data were obtained through a variety of studies, including the Implicit Association Test (IAT) paradigms, a blossoming research tool in social psychology The IAT determines a respondent's associations with a given topic without using traditional interview methods. In essence, participants are shown one word at a time, such as "beef", and are asked to place it into two disjunctive categories, for example, "male" or "female". Analysis of mean reaction times for identification of the "gender" of meat supports a significant link between maleness and meat.

Many scholars in social sciences also note this link between maleness and meat and suggest historic and present relationships. In a less recent study, Twigg (1979) examines a perceived meat hierarchy that corresponds to status and power., with red meats at the top of the hierarchy and chicken and fish at the bottom. Throughout her research, Twigg provides evidence for a relationship between meat and physical muscle building, animal strength, and even lust. She notes that the explicit yet underlying sexual connotation is undeniable, as young men were once encouraged to participate in a vegetarian diet to reduce and control their "passions", associating a plant-based diet with purity. (Twigg, 1979, p. 20)

On the contrary, western women traditionally aim to serve a more submissive role, both physically and through their contributions within the domestic sphere (Twigg, 1979). Historically, women in western societies were often relegated to the home and therefore responsible for tasks related to food, such as cooking, serving, and shopping for food. Their responsibilities in the domestic sphere allowed women to engage with nutrition more closely and afforded them a better understanding of the necessary components of a proper diet. If significant

meat consumption is associated with masculinity, it follows that moderate meat consumption is associated with femininity. Pronounced gender differences exist in regards to meat consumption; for example, when compared to men, women eat significantly smaller portion sizes of meat, eat it less frequently, are more likely to be vegetarian across currently surveyed cultures, and care for animal welfare in general (Ruby, 2012). In addition to this, women differ in their perception of meat, as they are more likely to report that its consumption is unhealthy (Love, Sulikowski, 2018) or that its production is environmentally harmful (Mullee at al., 2017) and exhibit a more positive attitude towards the reduced consumption of meat (Haley, Zinkiewicz, Hardiman, 2015).

A variety of studies record that vegetarian and non-vegetarian women have a tendency to view vegetarianism as a matter of ethics. Researchers interpret this as a potential result of women's evolutionary history as care-takers (Ruby, 2012). In a UK sample, women were more likely to support food production in ways that minimize animal suffering, were less likely to disagree with the statement "using animals for food cannot be morally justified", and were more inclined to purchase "ecologically-friendly" food products that minimize environmental damage (Beardsworth, et al., 2002).

In addition, the ways that women are encouraged to relate to food and body image may increase the likelihood that they will adopt a vegetarian diet. While body image in and of itself is a multifaceted, cultural concept, women are more likely to be engaged in attempts to lose weight through restriction of specific foods and food intake in general. Furthermore, women tend to be more dissatisfied with their body shape than men, whose ideal body image is based on an entirely different set of factors (Pingitore, Spring, Garfield, 1997). These tendencies, in addition with the clear understanding of meat as masculine, are likely to contribute to women's perception of meat, and their subsequent willingness to avoid meat consumption.

Vegetarianism and age

Significant differences in motivation vary across generations, with younger individuals seeming to be motivated by moral and environmental concerns, and middle-aged individuals being motivated by health reasons (Pribis, Pencak, Grajales, 2010), creating a complex relationship between age and diet.

With attention to vegetarian food patterns being common among adolescents, recognition of teenage vegetarianism is a necessary discourse to holistically grasp the existing relationship between age and vegetarian dieting. During a juvenile period of life, individuals balance the need for self-expression with the needs of their community, which is commonly accompanied by rebellion against norms and hierarchies (Argyle, 1986). Considering that not eating meat has been historically viewed as deviant behavior (Kellman, 2000), could this desire to deny behavioral norms encourage vegetarianism, or discourage it due to an inclination to rebel against social hierarchies? Recent investigation measures the prevalence of teenage vegetarianism through qualitative data analysis of survey responses from two thousand students from 52 high schools in South Australia (with a mean age of 16). Findings show that vegetarianism is primarily a phenomenon amongst female teens (Worsley, Skrzypiec, 1998), with 8-37% of women reporting engagement in a vegetarian diet, ranging in prevalence due to differences in definition. A corresponding additional study examined the cognitive and social ideological influences associated with teenage vegetarianism amongst the same student population, revealing that Full and Semi Vegetarians (FSV) cared more about their appearance, used TV programs for behavioral modeling, and showed greater prevalence of extreme weight loss behaviors (Worsley, Skrzypiec, 1997).

Although vegetarianism and generalized meat avoidance has been reported to be prevalent among young people, modern research specific to college students is extremely scarce, creating a missing link in sociological and clinical literature (Huang et al., 2010). University settings differ significantly from other environments, with influences of communal living and mindset playing a role in their uniqueness. At the studied university, it is mandatory that first year students live in campus housing (excluding commuter students), which requires that students partake in a meal plan. It is no secret that university dining services are often limited, with the students studied being provided with one dining hall, multiple fast-food options, coffee shops, and convenience markets. Considering the lack of dining variety on campus, alternatives become a challenge for students to access, discouraging more health-conscious and ecologically-friendly choices. Further investigation of college students' dietary habits has the potential to illuminate social influence, desire for community, and frugality as potential influences as they develop their identities.

Generally speaking, age has been linked with meat consumption, with increasing age being proven to show a positive correlation with preferences for more meatless meals and less red meat (Rimal, 2002). Rimal suggests that the relationship between age and these preferences is likely related to previous research showing a positive correlation between age and general health concerns (including concerns for food safety and using food labels for nutritional information). As age increases, it is possible that diet and its effects on physical well being require more attention, causing a decrease in meat consumption over time. Furthermore, desires to become vegetarian in adolescence are often suppressed by parents, causing vegetarian tendences to remain dormant until individuals reached an age that had provided them with a degree of independence from parental control. (Beardswroth, Keil, 1991, p.21).

Motives and Barriers of Vegetarianism

Motivations for pursuing a vegetarian diet cover a broad spectrum, with recent studies finding consistency in these responses. Throughout global contemporary research, the most commonly reported motivation given by vegetarians is of ethical concern, frequently followed by personal health reasons (Beardsworth, Keil, 1991) (Fox, Ward, 2008) (Jabs, Devine, Sobal, 1998). Other initiatives include concerns for environmental conservation, spiritual purity, and disgust at the sensory properties of meat consumption, all reported in fluctuating degrees.

Considering the two most common motivations, a study of vegetarians proposes two separate processes for the participation in a vegetarian diet: ethical and health vegetarians (Jabs, Devine, Sobal, 1998). Through analysis of qualitative data, findings reveal that ethical vegetarians acted based upon engaging their diet with moral considerations of animal welfare, and health vegetarians acted out of concern for potential disease and benefits of adopting a meatless diet. A corresponding and more recent study confirms the demonstrated psychological differences between ethically motivated and health-motivated vegetarians, and establishes meaningful relationships between the two (Rosenfeld, 2018). Rosenfeld also emphasizes the disadvantages of adopting a previously studied ethical-health dichotomy, where this method may overlook significant variance between types of ethical concerns, namely concerns for the environment and moral engagement with animals. In a study of 361 respondents, a resemblance was identified between animal-motivated and environmentally motivated vegetarians, finding that their diets were adopted as a means to achieve more prosocial and moral goals, in contrast with the personal goals of health-motivated vegetarians. In order to comply with this finding, this study's analysis of ethical motivations will include both those concerned with the environment and with animal welfare.

Furthermore, common barriers are also perceived, inhibiting the abstinence of meat consumption. In a study of 601 randomly selected South Australians, the most frequently reported barriers were the enjoyment of eating meat and unwillingness to change eating habits, these results being consistent across both genders and all age groups (Lea, Worsley, 2006). Other responses, in order of frequency, include the belief that humans are meant to eat meat, being surrounded by a family that eats meat, and the need for more information about vegetarian diets.

While no data was collected regarding motivations or barriers to UTC students' diets, similar research can be referenced, such as *Influences on Meat Avoidance Among British Students*, where male and female undergraduates who had chosen a vegetarian dish in a campus dining hall reported a variety of motives of meat avoidance and abstinence (Santos, Booth, 1996). Following a questionnaire administered to 240 students (only those who chose the vegetarian option at the dining hall), 41 female students were open-endedly interviewed about the reasons for their choice of a meatless dish[2]. The interviewees were then divided into two groups based on their reported behavior: partial meat avoiders (who avoided at least one type of meat), and vegetarians (who avoided any kind of meat consumption). All students interviewed provided one primary reason for choosing the vegetarian option, with many others providing additional reasons. Among the 28 partial meat avoiders interviewed, 32% of responses indicated ethical concern as their first reason; among the 13 vegetarians interviewed, 54% of responses indicated ethical concern as their first reason, proving ethics to be the primary concern of both student populations. In addition, both groups were interviewed about the disadvantages of the dish they had just chosen, highlighting possible barriers inhibiting students from adopting a more

[2] Only females were recruited in this study, limiting a holistic representation. They were selected instead of men as they were more representative of the meat avoidance process than men, and more females than men completed the survey. Also, vegetarianism and/or meat avoidance has greater incidence among young females.

meatless diet. The most common response involved sensory distaste, followed by lack of meatless choices.

Attitudes Towards Vegetarianism

Throughout history, vegetarians and omnivores are documented to perceive each other and themselves in varying different manners, with attitudes of both populations changing over time. Throughout much of the 20th century, vegetarians were viewed in a distinctly negative way, considered as menacing and callous, displaying "little regard for the suffering of their fellow human beings" (Barahal, 1946, p.12). A later study in *Psychology Today* examined the perceptions of people with varying diets, with responses implying that vegetarians were viewed as pacifist, hypochondriacal, and drug-using (Sadalla, Burroughs, 1981). Although these attitudes are becoming increasingly less common, recent incidents demonstrate negative perception of those who abstain from meat consumption, with a US high school student being suspended for wearing a t-shirt with the word "vegan" on the back (Grossman, 2004). As these discriminations lessen, multiple studies have emerged that report attitudes towards vegetarians as generally positive (Chin, Fisak, Sims, 2002). Further research echoes this observance, with vegetarian targets being rated as more virtuous than omnivorous targets (Ruby, Heine, 2011). When asked how they view themselves, vegetarians claimed to feel intellectual, non-competitive, and even sexy (Sadalla, Burroughs, 1981).

In contrast, fast food lovers from the same study perceived themselves to be religious, family-oriented, and competitive[3]. Most attitudes of omnivores towards vegetarians are consistent with those of the general population, with an exception including individuals higher in

[3] Potential biases may exist in this research, as some vegetarians also consume fast food frequently, and income level of these respondents were not considered.

authoritarianism. Former investigation establishes this relationship through the development of a scale designed to measure attitudes toward vegetarians (ATVS). Data shows significant correlation between ATVS and the construct of authoritarianism, with supporters proving to be particularly critical of vegetarians due to their understanding that vegetarianism beliefs contradict mainstream society (Chin, Fisak, Sims, 2002).

A particularly complex relationship to investigate is held between vegetarians and vegans, with the only difference being a greater extent of restriction amongst vegans, who do not consume any animal byproduct, in addition to abstinence from meat consumption. While one might think that a community may be established here, many vegans perceive vegetarians to be morally inconsistent, criticizing their contradictory refrain from meat consumption but not animal products in entirety. Meanwhile, vegetarians frequently find veganism too limiting and demanding, and understand vegetarianism as a more approachable and attainable goal (Beardsworth, Keil, 1991). This sense of judgement may even prohibit some individuals from committing to a strictly meatless diet, with the labels “vegetarian” and “vegan” presenting dilemmas on their own. An especially compelling population to evaluate is flexitarians, a growing population that reduces meat consumption without banning it entirely, setting them apart from the vegetarian population (Verain, Dagevos, Antonides, 2015). A recent study analyzing flexitarian behaviors implies the need to consider flexitarians as a separate group of consumers. Individuals of this culture tend to value animal welfare less than vegetarians, but more than full-time meat eaters (DeBacker, Hudders, 2015). Recognizing these key differences could influence the plant- based industry to target this unique population and generate a decrease in meat consumption amongst omnivores. The growth and development of this community may

be key in bridging the gap between two seemingly polarized ends, vegetarians and non-vegetarians.

Psychological Disconnect

As previously investigated, research shows that vegetarians' main motivation is most commonly of ethical concern, in contrast with non-vegetarians' primary reason being the enjoyment of meat consumption. Is this moral sentiment reported by vegetarians shared amongst all individuals, but only acted on by few? Or, is it possible that some people simply do not have, or ignore this internal moral dilemma?

According to Paul Rozin (2007), meat should be of special interest to psychologists, because it is a quintessential example of ambivalence. Eating meat is consistently conceptualized as a moral choice, with food practices providing a unique perspective in observing everyday moral action (Bastain, Loughnan, Haslam, Radke, 2012) . More recent analysis concludes that meat itself may have made us moral (Mameli, 2013), and that the evolutionary context of sharing meat as an essential source of nutrition established the moral system that exists amongst humans today (De Backer, Hudders, 2015). The relationship between meat consumption and moral engagement, or lack thereof, is an expanding field of study with many social scientists aiming to understand the disconnect from intention to action.

In a recent experiment, the role of meat consumption in the denial of moral status is investigated, aiming to identify why many people enjoy eating meat, but few enjoy harming or killing other sentient creatures. A paradox is created: people dislike hurting animals, and like eating meat (Bastain, Loughnan, Haslam, 2010). Loughnan explains that meat consumption may be viewed as a specific displayal of the Cognitive Dissonance Theory, where a belief and a practice are at odds (Festinger, 1957). According to this theory, alteration of an inconsistent

element (in this case attitudes towards meat and animals) can be performed in order to relieve any emotional stress the paradox creates. In attempts to understand this irony, researchers aimed to morally withdraw participants. Individuals were asked to eat dried beef or dried nuts, then indicate their moral concern for animals, and judge the moral status and mental states of a cow. Results of the experiment demonstrated that people may escape the conflict between meat consumption and animal welfare by perceiving animals as unworthy and unfeeling, thereby alleviating dissonance and removing possible feelings of guilt; others react to this moral dilemma by decreasing their willingness to indulge in meat consumption. These results are echoed by corresponding experiments indicating that the categorization of animals as food has inhibited animals' perceived capacity to suffer, which in turn has dampened moral concern for animals (Bratanova, Loughnan, Bastian, 2011). Both studies conclude that people are able to simultaneously love animals and love meat because animals categorized as food are perceived to be less sensitive to pain and less worthy of moral concern.

Similarly to the use of the Cognitive Dissonance Theory, recent studies also advance towards better understanding of diet choice by referencing the Moral Disengagement Theory (MDT), investigating meat consumption and substitution to study the process of moral self-regulation (Graca, Calheiros, Oliveira, 2016). The Moral Disengagement Theory, a term founded in social psychology, suggests that disengagement mechanisms are activated by individuals in response to one's adoption of self serving yet harmful behaviors (Bandura, 2016). A questionnaire was administered to measure moral disengagement (MD) considering the impact of meat consumption, with results indicating that MD measurement proves to be a valid assessment of selective deactivation of moral self-regulatory processes, specifically when considering the impact of meat consumption. The data collected and analyzed through a

sequential mediation model reveals that frequency of meat consumption affects individuals' willingness towards meat substitution indirectly, associated with meat attachment and moral disengagement.

While better comprehension of these mechanisms has assisted in the elucidation of this paradox, the problem itself still remains. Further understanding and extension of present research on these moral dilemmas would be beneficial in accomplishing a society whose morals align more closely with their actions.

Conclusion

With knowledge regarding vegetarianism expanding, profound impacts of varying motivations and demographics have become increasingly more understood. Investigation of vegetarianism amongst college students is scarce, creating a gap in clinical and sociological studies. Through collection of demographic data and reports of rated love of the outdoors, the present research analyzes relationships between varying factors and diet. The hypothesis predicted that if students rated their love of the outdoors at a high value, then they would be more likely to participate in environmental conservation by means of dietary action, demonstrating a positive correlation between love of the outdoors and restriction of meat consumption. This speculation was not supported by students surveyed at UTC, as no significant correlation was detected between these 2 variables. A significant relationship between age and diet was confirmed by the data, reflecting previous studies that highlight the complex nature of this association. Lastly, no significant relationship was found between gender and diet, which conflicts the thoroughly established positive correlation between females and vegetarian dieting. The results of this study illuminate a need for more of its kind, as further research on college

students' eating habits is necessary to holistically comprehend variants of motives for specific diets.

An interesting avenue for future research may be to examine a less defined population, but rather flexitarians, and others who are willing to interact with a more adjustable meatless diet. This exciting group of dieters have great potential for decreasing greenhouse gas emissions and improving public health (Ritchie, Reay, Higgins, 2018). Furthermore, demand for plant-based meat substitutes is increasing globally (Curtain, Grafenauer, 2019), providing an opportunity for the food industry to target individuals who consume meat for flavor, as many meat substitutes mimic the sensory qualities of meat. While this topic has been discussed for several decades, it has recently become a trending topic amongst food and research committees (He, Evans, Liu, Shao, 2020). With increasing popularity, it is likely that meat substitutes will become more accessible, decreasing overall meat consumption. Perhaps a younger target audience may be more receptive, as they are not only more impressionable, but are also more likely to be surrounded by peers that engage with vegetarianism and veganism. As methods to conserve the environment increase in relevance and urgency, education of younger generations about sustainability and diet could provide hope for the future of the planet and humankind at large. Not only is vegetarianism becoming more common, but it also appears to be gradually more attainable and admired.

References

Bandura, A. (2016). *Moral disengagement: How people do harm and live with themselves. Worth Publishers.*

Barahal, M.C. (1946). The cruel vegetarian. *Psychiatric Quarterly*, 20, 3-13. https://doi.org/10.1007/BF01575046

Bastian, B., Loughnan, S., Haslam, N., Radke, H.R.M. (2011). Don't mind meat? The denial of mind to animals used for human consumption. *Personality and Social Psychology Bulletin*, 38(2), 247-256. https://doi.org/10.1177/0146167211424291

Beardsworth, A., Bryman, A., Keil, T., Goode, J., Haslam, C. and Lancashire, E. (2002), Women, men and food: the significance of gender for nutritional attitudes and choices. *British Food Journal,* 104(7), 470-491. https://doi.org/10.1108/00070700210418767

Beardsworth, A., Keil, T. (1991). Health-related beliefs and dietary practices among vegetarians and vegans: a qualitative study. *Health Education Journal,* 50(1), 38-42. https://doi.org/10.1177/001789699105000111

Beardsworth, A., Keil, T. (1991), Vegetarianism, Veganism, and Meat Avoidance: Recent Trends and Findings. *British Food Journal*, 93(4), 19-24. https://doi.org/10.1108/00070709110135231

Beardsworth, A., Keil, T. (1992). The vegetarian option: varieties, conversions, motives, and careers. *The Sociological Review*, 40(2), 253-293. https://doi.org/10.1111/j.1467-954X.1992.tb00889.x

Bratanova, B., Loughnan, S., Bastian, B. (2011). The effect of categorization as food on the perceived moral standing of animals. *Appetite*, 57(1), 193-196. https://doi.org/10.1016/j.appet.2011.04.020

Bratanova, B., Vauclair, C.M., Kervyn, N., Schumann, S., Wood, R., Klein, O. (2015). Savouring morality. Moral satisfaction renders food of ethical origin subjectively tastier. *Appetite*, 91(1), 137-149. https://doi.org/10.1016/j.appet.2015.04.006

Charles, H., Godfray, J., Aveyard, P., Garnett, T., Hall, J. W., Lorimer, J. Pierrehumbert, R. T., Fiddes, N. (1991). Meat: a natural symbol. https://doi.org/10.4324/9780203168141

Chin, M.G. Fisak, B., Sims, V.K. (2015). Development of the attitudes toward vegetarians scale. *Anthrozoos*, 15(4), 332-342. https://doi.org/10.2752/089279302786992441

Curtain, F., Grafenauer, S., (2019). Plant-based meat substitutes in the flexitarian age: an audit of products on supermarket shelves. *Nutrients*, 11(11), 2603. https://doi.org/10.3390/nu11112603

De Backer, C., Hudders, L. (2015). Meat morals: relationship between meat consumption, consumer attitudes towards human and animal welfare, and moral behavior. *Meat Science*, 99, 68-74. https://doi.org/10.1016/j.meatsci.2014.08.011

Festinger, L. (1957). A Theory of Cognitive Dissonance. *Standard University Press.*

Fox, N., Ward, K. (2007). Health, ethics, and environment: a qualitative study of vegetarian motivations. *Appetite*, 50(2-3), 422-429. https://doi.org/10.1016/j.appet.2007.09.007

Graca, J. Calheiros, M.M., Oliveira, A. (2016). Situating moral disengagement: motivated reasoning in meat consumption and substitution. *Personality and Individual Differences*, 90, 353-364. https://doi.org/10.1016/j.paid.2015.11.042

Grossman, J. (2004). Vegan with a vengeance. *Psychology Today*. https://www.psychologytoday.com/us/magazine/archive/2004/03

Gurven, M., Hill, K. (2009). Why do men hunt? *Current Anthropology*, 50(1), 51-74. https://doi.org/10.1086/595620

Huang, T. K., Harris, K. J., Lee, R. E., Nazir, N., Born, W., Kaur, H. (2010). Assessing overweight, obesity, diet, and physical activity in college students. *Journal of American College Health*, 52(2), 83-86. https://doi.org/10.1080/07448480309595728

Jabs, J., Devine, C. M., Sobal, J. (1998). Model of the process of adopting vegetarian diets: health vegetarians and ethical vegetarians. *Journal of Nutritional Education*, 30(4), 196-202. https://doi.org/10.1016/S0022-3182(98)70319-X

Jabs, J., Sobal, J., Devine, C. M., (2010). Managing vegetarianism: identities, norms and interactions. *Ecology of Food and Nutrition*, 39(5), 375-394. https://doi.org/10.1080/03670244.2000.9991625

Kellman, S. (2000). Fish, flesh, and foul: the anti-Vegetarian animus. *The American Scholar, 69*(4), 85-96. http://www.jstor.org/stable/41213076

Laessoe, J. (2016). Environmental Activism. *Peters M. Encyclopedia of Educational Philosophy and Theory*. https://doi.org/10.1007/978-981-287-532-7_443-1

Lea, E., Worsley, A. (2003). Benefits and barriers to consumption of a vegetarian diet in Australia. *Public Health Nutrition*, 6(5), 505-511. https://doi.org/10.1079/PHN2002452

Loughnan, S., Haslam, N., Bastian, B. (2010). The role of meat consumption in the denial of moral status and mind to meat animals. *Appetite*, 55(1), 156-159. https://doi.org/10.1016/j.appet.2010.05.043

Mameli, M. (2013)Meat made us moral: a hypothesis on the nature and evolution of moral judgment. *Biol Philos,* 28, 903–931. https://doi.org/10.1007/s10539-013-9401-3

Mullee, A., Vermeire, L., Vanaelst, B., Mullie, P., Deriemaeker, P., Leenaert, T., De Henauw, S., Dunne, A., Gunter, M. J., Clarys, P., Huybrechts, I. (2017). Vegetarianism and meat consumption: a comparison of attitudes and beliefs between vegetarian, semi-vegetarian, and omnivorous subjects in Belgium. *Appetite*, 114(1), 299-305. https://doi.org/10.1016/j.appet.2017.03.052

Pingitore, R., Spring, B. and Garfieldt, D. (1997), Gender Differences in Body Satisfaction. *Obesity Research*, 5(1)402-409. https://doi.org/10.1002/j.1550-8528.1997.tb00662.x

Pribis, P., Pencak, R. C., & Grajales, T. (2010). Beliefs and attitudes toward vegetarian lifestyle across generations. *Nutrients*, *2*(5), 523–531. https://doi.org/10.3390/nu2050523

Plous, S. (2003). Is there such a thing as prejudice toward animals?. *Prejudice and Discrimination*, 509-528. McGraw-Hill.

Rimal, A. P. (2002). Factors affecting meat preferences among American consumers. *Family Economics and Nutrition Review*, 14(2), 36-42. https://faunalytics.org/wp-content/uploads/2015/05/Citation405.pdf

Ritchie, H., Reay, D. S., Higgins, P. (2018). Potential of meat substitutes for climate change mitigation and improved human health in high-income markets. *Frontiers in Sustainable Food Systems*, 2(16), https://doi.org/10.3389/fsufs.2018.00016

Rosenfeld, D. L. (2018). The psychology of vegetarianism: recent advances and future directions. *Appetite*, 131(1), 124-138. https://doi.org/10.1016/j.appet.2018.09.011

Rosenfeld, D. L. (2019). Gender differences in vegetarian identity: how men and women construe meatless dieting. *Food quality and preference*, 81(1). https://doi.org/10.1016/j.foodqual.2019.103859

Rosenfeld, D. (2019). Why some choose the vegetarian option: are all ethical motivations the same? *Motivation and Emotion*, 43, 400-411. https://doi.org/10.1007/s11031-018-9747-6

Rozin, P., Hormones, J. M., Faith, M. S., Wansick, B. (2012). Is meat male? A quantitative multimethod framework to establish metaphoric relationships. *Chicago Journals*, 39(3), 629-643. https://doi.org/10.1086/664970

Ruby, M.B., Heine, S.J. (2011). Meat, morals, and masculinity. *Appetite*, 56(2), 447-450. https://doi.org/10.1016/j.appet.2011.01.018

Ruby, M. B. (2012). Vegetarianism. A blossoming field of study. *Appetite*, 58(1), 141-150.https://doi.org/10.1016/j.appet.2011.09.019

Sadalla, E., Burroughs, J. (1981). Profiles in Eating: sexy vegetarians and other diet-based social stereotypes. *Psychology Today*, 15, 51-57. https://www.academia.edu/5026588/Profiles_in_Eating_Sexy_Vegitarians_and_Other_Diet_Based_Social_Stereotypes

Santos, L., Booth, D. (1997). Influences on meat avoidance among british students. *Appetite*, 27(3), 197-205. https://doi.org/10.1006/appe.1996.0046

Scarborough, P., Springmann, M., Jeff, S. A. (2018). Meat consumption, health, and the environment. *Science Magazine*, 261(6399). https://doi.org/10.1126/science.aam5324

Statista Research Department. (2018).

Twigg, J. (1979). Food for thought: purity and vegetarianism. *Religion,* 9(1), 13-35. https://doi.org/10.1016/0048-721X(79)90051-4

Verain, M.C.D, Dagevos, G. (2015). Flexitarianism: a range of sustainable food styles. *Handbook of Research on Sustainable Consumption*, 209-223. https://doi.org/10.4337/9781783471270.00023

Weinsier, R. (2000). Use of the term vegetarian. *The American Journal on Clinical Nutrition*, 71(5), 1211-1212. https://doi.org/10.1093/ajcn/71.5.1211

Worsley, A., Skrzypiec, G. (1997). Teenage vegetarianism: beauty or the beast? *Nutrition Research*, 17(3), 391-404. https://doi.org/10.1016/S0271-5317(97)00003-1

Worsley, A., Skrzypiec, G. (1998). Teenage vegetarianism: prevalence, social, and cognitive contexts. *Appetite*, 30(2), 151-170. https://doi.org/10.1006/appe.1997.0118