2020

Meat-Eating Justification and Relationship Closeness with Vegetarian Family, Friends, and Romantic Partners

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This is to certify that the doctoral dissertation by

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Abstract

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MS, Walden University, 2009

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Proposal Submitted in Partial Fulfillment

of the requirements of

Doctor of Philosophy in Psychology

Walden University

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Abstract

Omnivores often respond negatively when friends, family members, or romantic partners disclose adoption of a vegetarian/vegan diet. Examining the beliefs behind these negative responses could result in improved relationships between omnivores and vegetarians. This study examined whether the beliefs omnivores hold to justify meat-eating are related to relationship closeness. The theory of planned behavior provided a foundation with which to examine the attitudes omnivores have about meat consumption. A survey was used with 190 omnivores with existing friend, family member, or romantic partner relationships who had become vegetarian/vegan. Multiple regression analysis was used to determine the extent to which meat-eating justification beliefs and type of relationship predicted relationship closeness. Denial and dissociation justifications significantly predicted lower closeness. Hierarchical justification significantly predicted higher closeness. Romantic partners and friend relationships predicted significantly higher levels of closeness. A 2x3 MANOVA determined relationships were significantly closer for frequency and diversity of activities prior to the adoption of a vegetarian/vegan diet. However, closeness in terms of strength was significantly higher after the diet change. Romantic partners were significantly closer after the diet change. A significant interaction was found between diet type and relationship type in which frequency of interactions was significantly higher for friends and family members before the diet change, however frequency of interactions was significantly higher for romantic partner after. The results may lead to positive social change by strengthening relationships. They may aid the development of interventions that address meat-related cognitive dissonance's impact on relationship closeness and focus on the positive strengthened influence the diet change has on relationships.

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Acknowledgements

I would like to thank my chairperson, Dr. Anthony Perry, who guided me through the entire dissertation process. His direction was invaluable. I would also like to thank the rest of my committee, Dr. Hedy Dexter and Dr. Elisha Galaif, for their help revising this to its final stage.

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Chapter 1: Introduction to the Study

Historians have documented vegetarianism throughout many different cultures, societies, and time periods. For example, the mathematician Pythagoras was a prominent vegetarian in ancient Greece (Spencer, 1996). Other prominent figures such as Leonardo daVinci and Sir Isaac Newton were also vegetarians (Shapin, 2007; Spencer, 1996). As long as there have been vegetarians, there have been nonvegetarians who do not approve (Shapin, 2007; Spencer, 1996). Newton's vegetarianism was not commonly known until after his death; according to historical accounts, he feared being known as a "Pythagorean" (Shapin, 2007). The word "Pythagorean" had come to be used as a derogatory, anti-Christian slur (Shapin, 2007).

In recent centuries, vegetarianism has become associated with animal rights; however, there are still many nonvegetarians who do not approve of the dietary choice (Shapin, 2007). Today, those who choose vegetarianism still report negative consequences when their dietary choice is revealed (MacInnis & Hodson, 2015). These consequences often include negative comments, lessened contact, dissolution of relationships, and derogatory remarks (Beverland, Wahl, & de Groot, 2015; Lerette, 2014; Minson & Monin, 2012; Rothgerber, 2012; Twine, 2014). Although many vegetarians report negative consequences, others report positive or neutral consequences (Merriman, 2010). An inquiry into the variables that contribute to negative or positive consequences for vegetarians could help generate more positive responses toward vegetarians. Strengthening relationships between omnivores and vegetarians is imperative as the number of vegetarians in the United States has doubled since 1994 (Budger, 2017). The results of this study could determine which attitudes yield positive or negative responses to friends, family members, or romantic partners who choose a vegetarian lifestyle. The information could be used to better inform therapists in addressing omnivore/vegetarian relationship issues.

In Chapter 1, I begin by presenting an overview of the literature that creates the background for the current study. This is followed by the problem statement derived from the gap in the research and details the purpose of the current study. The research questions are presented along with an overview of the theoretical framework and methodology that guided the study. Then come the operational definitions of key concepts, assumptions, limitations, the scope, delimitations, and significance of the study. These areas are addressed in greater detail in Chapters 2 and 3.

Background

Attitudes toward meat consumption can be positive, citing necessity for health and growth (Piazza et al., 2015), or negative, citing health risks, such as increased rates of heart disease, type 2 diabetes, cancer, and obesity (Budger, 2017). These attitudes can be morally derived for both vegetarians and omnivores. For example, studies have shown that omnivores may hold beliefs related to human domination over animals (Dhont & Hodson, 2014) or exist in a state of ambivalence in which conflicting attitudes remain separate, so that positive feelings toward animals do not cause distress while consuming meat (Norton, 2009). For vegetarians, these attitudes may align with moral beliefs of not harming animals by ending consumption (DeGrazia, 2009) or be indicative of greater empathy toward animals, which has been identified from neural imaging studies in which higher levels of activity were observed in the empathic centers of the brain among vegetarians compared to omnivores when presented with animal photos (Felippi et al., 2010). Negative attitudes that vegetarians hold toward meat consumption may also relate to the environmental impacts caused by 70 billion livestock existing at any given time (Fox & Ward, 2008). Conversely, some

omnivores may deny that meat consumption creates any environmental concerns at all (Macdiarmid, Douglas, & Campbell, 2016).

When two or more conflicting beliefs or attitudes are held simultaneously, the result is *ambivalence* (Berndsen & Van der Pligt, 2004). When two or more conflicting beliefs or attitudes are held simultaneously and are relevant at the time of the behavior, the result is *cognitive dissonance* (Greenwald & Ronis, 1978). Therefore, ambivalence would occur when an individual would hold a positive attitude toward eating meat and a positive attitude toward animals (Norton, 2009). If the action of consuming meat is made relevant in that moment and situation, the result would then be cognitive dissonance. Situations involving ambivalence and/or cognitive dissonance have been shown both to lower the future planned meat consumption (Povey, Wellens, & Conner, 2001) and to lower the present concern for animals (Loughnan, Haslam, & Bastian, 2010).

Attitudes that relate to meat consumption, or *meat justification beliefs*, have been categorized in various ways (Joy, 2010; Piazza et al., 2015; Rothgerber, 2012). Meat justification beliefs have been studied in relation to their impact on meat consumption. The beliefs of denial of mind (animals do not think or feel), hierarchical justification (humans are superior to animals), religious justification (animals were created for our use), health justification (animal consumption is necessary for good health), pro-meat (enjoyment of meat), and human destiny/fate justification (animals are lower on the food chain) have been found to correlate with higher levels of meat consumption (Rothgerber, 2012). In addition, meat justification beliefs have been found to increase when a vegetarian who consistently adheres to the diet is present (Rothgerber, 2014).

Studies have shown that a majority of vegetarians experience negative reactions and negative relationship consequences as a result of becoming vegetarian (Beverland et al., 2015; Twine, 2014). Previous research shows that adverse effects in relationships can occur when one person adopts a vegetarian diet. For example, vegetarians regularly face negative comments, lessened contact, and microagressions (Lerette, 2014; MacInnis & Hodson, 2015; Twine, 2014). Previous research has not examined the impact of meat justification beliefs on *relationship closeness* using a quantitative design. This study will fill that gap. The purpose of the current study is to understand which meat consumption beliefs tend to impact omnivores' relationships with their vegetarian/vegan friends, family members, or romantic partners. With vegetarianism doubling to 3% of the United States population since 1994 and vegans gaining numbers at an even greater rate, the effects of vegetarianism on existing relationships becomes increasingly relevant (Budger, 2017).

Problem Statement

The process of becoming vegetarian not only brings to the surface the identity associated with one's eating values, but it also shines a light on the influence of varied dietary choices on social relationships (Lindquist, 2013). The literature suggests that some individuals view vegetarian diets unfavorably, and that those who choose to adhere to vegetarian diets often experience negative social consequences (Ruby et al., 2016). Several studies have found that vegetarians experience negative comments and reactions from family, friends, acquaintances, and strangers, and in some cases a reduction or ending of social contact (Beverland et al., 2015; Lindquist, 2013; MacInnis & Hodson, 2015; Twine, 2014).

MacInnis and Hodson (2015) highlighted that vegetarians are, as a group, viewed more negatively by omnivores than are individuals who have other dietary restrictions;

further vegetarians who chose the diet for moral reasons are viewed more negatively than those than those who chose the diet for health reasons. Individuals who choose restrictive diets, such as gluten-free, when there is no apparent medical need, were also found to be viewed more negatively than those who adhere to dietary restrictions based for medical reasons (MacInnis & Hodson, 2015). The authors conclude that omnivores view nonnormative diets more negatively when the diets are chosen for social rather than health reasons (MacInnis & Hodson, 2015).

Lindquist (2013) illustrated that the perception of "preaching" or "judging" by vegetarians toward omnivores was not based on the actual words or behavior of the vegetarian but rather simply due to the individual being vegetarian. To understand if justification beliefs impact social relationships when an individual becomes vegetarian, it may be best to examine the omnivore in the social relationship. Minson and Monin (2012) found that omnivores who held negative attitudes toward vegetarians were more likely to perceive that vegetarians would make moral judgments about their eating behavior. MacInnis and Hodson (2015) found that vegetarians were treated as negatively and, in some cases, more negatively than similarly marginalized groups included in the study, such as atheists and blacks. A commonly reported consequence, once their dietary choice was revealed, was a lessening of contact from omnivore friends and family members (MacInnis & Hodson, 2015).

Those who were found to hold more negative attitudes toward vegetarians were also found to have more positive views of meat consumption (MacInnis & Hodson, 2015; Minson & Monin, 2012). Rothgerber (2014) suggested that derogation of vegetarians may help to alleviate the perceived moral reproach that some omnivores experience in the presence of vegetarians/vegans. Rothgerber (2012) found that people use quantifiable justification beliefs

to illustrate why it is acceptable to consume animals. The justification beliefs that relate to higher overall meat-eating justification include denial of mind (animals do not think or feel), hierarchical justification (humans are superior to animals), religious justification (animals were created for our use), health justification (animal consumption is necessary for good health), pro-meat (enjoyment of meat), and human destiny/fate justification (animals are lower on the food chain; MacInnis & Hodson, 2015; Rothgerber, 2012). Those using justification beliefs such as dissociation or avoidance were associated with lesser consumption of beef, chicken, and pork (Rothgerber, 2012). A nonexperimental, quantitative comparison of omnivore meat justification beliefs with the closeness of relationships with friends, family members, and romantic partners who adopted a vegetarian diet may help to contribute to a greater understanding of the impact of becoming vegetarian/vegan on social relationships with omnivores and whether omnivores beliefs about meat consumption play a role in those relationship changes.

Purpose of the Study

The purpose of this quantitative study was to explore a possible relationship between the beliefs supporting meat consumption (pro-meat, human destiny/fate, health, religious, hierarchical, denial of mind, dichotomization, avoidance, dissociation) that an individual holds and the closeness of her or his relationships (frequency, diversity, strength, total) with friends, family members, and romantic partners who became vegetarian/vegan. The literature suggests various types of negativity are experienced by vegetarians on a social level (Lerette, 2014; Twine, 2014). An individual becoming a vegetarian can create discomfort in others (Minson & Monin, 2012). This current study examined the omnivore's personal beliefs about the consumption of meat with the closeness of his or her relationships (frequency, diversity,

strength, total) with friends, family members, and romantic partners who became vegetarian/vegan.

Research Questions and Hypotheses

Research Question 1: To what extent do omnivores' justification beliefs toward meat consumption (pro-meat, denial, hierarchical, dichotomization, dissociation, religious, avoidance, health, human destiny/fate), as measured by the Meat-Eating Justification scale, relate to closeness of relationships (frequency, diversity, strength, total score) with vegetarians, as measured by the Relationship Closeness Inventory?

H_0: Justification beliefs toward animal consumption are not significant predictors of relationship closeness between omnivores and vegetarians.

H_1: Justification beliefs toward animal consumption are significant predictors of relationship closeness between omnivores and vegetarians.

Research Question 2: To what extent does relationship type (friend, family member, romantic partner) relate to relationship closeness (frequency, diversity, strength, total score) with vegetarians, as measured by the Relationship Closeness Inventory?

H_0: Relationship type (friend, family member, romantic partner) is not a significant predictor of relationship closeness between omnivores and vegetarians.

H_1: Relationship type (friend, family member, romantic partner) is a significant predictor of relationship closeness between omnivores and vegetarians.

Research Question 3: Does relationship type (friend, family member, romantic partner) influence closeness of relationships (frequency, diversity, strength), as measured by the Relationship Closeness Inventory?

H_0: There is no significant difference in closeness of relationships between friends, family members, and romantic partners.

H_1: There is a significant difference in closeness of relationships between friends, family members, and romantic partners.

Research Question 4: Does diet type (prior to and since change to vegetarian diet) influence closeness of relationships (frequency, diversity, strength), as measured by the Relationship Closeness Inventory?

H_0: There is no significant difference in closeness of relationships between omnivores and friends, family members, and romantic partners (before and after dietary change).

H_1: There is a significant difference in closeness of relationships between omnivores and friends, family members, and romantic partners (before and after dietary change).

Theoretical Framework

The theory of planned behavior (TPB) is a theoretical perspective in which the concepts of attitude toward an action, the societal norm toward the behavior, and perceived control over participating in the behavior combine to create intention (Ajzen, 1985). This intention is theorized to be the strongest predictor of behavior (Ajzen, 1985). The focus of this study is the effect of the justification beliefs that omnivores hold toward the behavior of meat consumption on the closeness of their relationships with vegetarians/vegans. These beliefs include attitudes toward the behavior, perceived societal norms about the behavior, and/or the perceived control one has over the behavior.

The 4 Ns of meat consumption sets forth four beliefs commonly held toward meat consumption (Piazza et al., 2015). These four beliefs of necessary, natural, normal, and nice

can all fall into the categories of attitude, perceived societal norm, and/or perceived control over behavior, as set forth in the theory of planned behavior (Ajzen, 1985; Piazza et al., 2015). Similarly, the categories of justification beliefs in Rothgerber's (2012) study also relate to attitudes, personal norms, and/or perceived control over the behavior of meat consumption, but they are broken down further into nine categories.

According to Rothgerber (2012), justification beliefs have been shown to correlate with the amount of meat (beef, chicken, pork) that one consumes. Higher overall justification scores result in higher meat consumption. Rothgerber (2014) provides evidence that being in the presence of a vegan or vegetarian who does not deviate from their diet elevates the overall justification score of omnivores; it is believed that the presence of a vegan or vegetarian causes omnivores to think about and preemptively feel the need to justify their own meat-eating behavior. The current study sought to determine whether a correlation also existed between omnivores' justification beliefs and their level of relationship closeness with family, friends, and romantic partners who switched to a vegetarian/vegan diet (as measured by retrospective relationship closeness scores of the relationship prior to the friend, family member, or romantic partner adopting the diet), and contrasted with relationship closeness scores based on the current relationship with the friend, family member, or romantic partner who is vegetarian/vegan.

Nature of the Study

The study was quantitative. A survey methodology within a nonexperimental, quantitative design was chosen to add to the existing qualitative literature on the impact of vegetarian/vegan diet change on existing relationships (Merriman, 2010; Twine, 2014). The predictor variables for the multiple regressions included the omnivores' justification beliefs

about meat consumption (pro-meat, denial of mind, hierarchical justification, dichotomization, dissociation, religious justification, avoidance, health justification, and human destiny/fate justification) and the type of relationship (friend, family member, romantic partner) between the omnivore and the current vegetarian/vegan. The criterion variable was relationship closeness (frequency, diversity, strength, total closeness score) between the omnivore and the vegetarian as reported by the omnivore. The independent variables for the MANOVA included type of relationship (friend, family member, romantic partner) and type of diet (omnivore, vegetarian/vegan). The dependent variables for the MANOVA were scores for closeness of relationship (frequency, diversity, strength).

Participants were omnivores, aged 18 or older, who had a preexisting relationship with a friend, family member, or romantic partner who adopted a vegetarian/vegan diet at least 6 months but less than 5 years prior to the study. This timeframe was chosen to limit the length of time required for recall, and thereby lessening the risk of inaccurate data. The friend, family member, or romantic partner must have still been adhering to the vegetarian/vegan diet. Each participant chose only one friend, family member, or romantic partner if more than one was available to choose from. The sample was drawn from the Walden University participant pool and from social media groups. A request was made within vegetarian/vegan social media groups for individuals from the United States, who became vegetarian/vegan within the required timeframe, to share the study link with friends, family members, or romantic partners, over 18 years, with whom they had a relationship with at the time of the dietary switch, to participate. The website surveymonkey.com was used to administer the surveys. The results were analyzed using SPSS Statistics v. 25 software.

Operational Definitions

Justification beliefs: The personal beliefs held to justify support for the practice of consuming animals (Rothgerber, 2012).

Omnivore: For the purpose of this study the term omnivore will include individuals who consume any combination of beef, pork, poultry, game, or fish (American Dietetic Association & Dietitians of Canada, 2003).

Relationship Closeness: For the purpose of this study, relationship closeness will be defined as a combination of frequency (time spent together), diversity (the number of different activities engaged in together), and strength (the influence one exerts over the choices the other makes) (Berscheid, Snyder, & Omoto, 1989).

Vegan: A strict vegetarian that consumes no animal products (American Dietetic Association & Dietitians of Canada, 2003). For the purpose of this study vegan will be combined with lacto-ovo vegetarians under the umbrella term of vegetarians.

Vegetarian: For the purpose of the study, the term vegetarian was used interchangeably with both lacto-ovo vegetarians (consuming no meat or fish, while allowing dairy and eggs), and vegans or strict vegetarians (consuming no animal products; American Dietetic Association & Dietitians of Canada, 2003).

Assumptions

One assumption was that the surveys were answered truthfully. The assumption was aided by the voluntary nature of the study. A second assumption was that the participants fully understood the questions, allowing for their answers to be accurate. A third assumption was the Meat-Eating Justification Scale (MEJ; see Appendix B) and the Relationship Closeness Inventory (RCI; see Appendix C) adequately measured what was intended to be

measured. A fourth assumption was that the timeframe (between 6 months and 5 years) was limited enough to allow for accurate recall of relationship closeness.

Scope and Delimitations

The purpose of the current study was to examine whether justification beliefs used for meat consumption could significantly predict the closeness of relationships with friends, family members, and romantic partners who had adopted a vegetarian/vegan diet. Understanding possible relationships between justification beliefs and closeness in relationships can offer direction to future studies as well as contribute to available knowledge about lessening the strain in relationships resulting from diet change. A challenge to this study was that it warranted data that a longitudinal study could best provide; however, measuring relationship closeness before one member becomes vegetarian/vegan would be impossible, as there is no way to predict who would eventually adopt a vegetarian/vegan diet. For this reason, participants (omnivores) completed the Relationship Closeness Inventory (see Appendix C) twice based on a relationship with a friend, family member, or romantic partner who had changed to a vegetarian/vegan diet. Each participant completed the RCI once, retrospectively, for the relationship as it was prior to the friend, family member, or romantic partner adopting a vegetarian diet; they completed it a second time for the current relationship since that friend, family member, or romantic partner had become vegetarian/vegan.

In addition to the methodology challenge described above, the scope and delimitations of the current study included aspects of the population. The choice was made to limit the population to United States citizens. Despite the varied cultural identities in the United States, this choice was made as a way to limit participants to those who were at least

within the melting pot social structure of the United States, rather than to include those who were fully immersed in various cultures from around the world. This choice certainly did not eliminate all cultural influence, but it was meant to lessen and blend that influence. In order to gather the required sample size, it was expanded to English-speaking countries with similar cultures. These included Canada, Australia, and Great Britain. It limited the generalizability of the results to the United States, Canada, Australia, and Great Britain. The three relationship groups (friends, family members, romantic partners) were chosen as a way of excluding acquaintance relationships. The RCI was created to measure those three relationship categories and therefore would not necessarily provide adequate data in acquaintance relationships.

Limitations

One limitation to the study was the threat to external validity from the use of convenience sampling. The use of a Walden University participant pool limited the generalizability of the results to the general population. This portion of my sample was drawn from a collegiate population and does not include individuals without any college experience. The secondary sample obtained from social media allowed for a more diverse sample, including individuals without college, however, that portion of the sample had its own limitation. It included only omnivores selected by the vegetarians/vegans in the relationship. Another limitation was inherent; it required that the vegetarian/vegan was a person with whom the omnivore was still in a relationship, thus precluding those individuals for whom the relationship had dissolved since the adoption of the vegetarian/vegan diet. Because the subject matter was not disclosed in the participant request, the process did not limit the sample; however, the sharing process may have limited the sample to those individuals with

whom the vegetarian/vegan felt comfortable sharing the study link.

A second possible issue related to internal validity. By requesting that the RCI be filled out once regarding the relationship with the individual while he or she was an omnivore, then requesting that it be filled out a second time based on the current status of the relationship, the participant may have realized that the change in relationship was what was being examined. This recognition could have resulted in less accurate answers, thereby leading to less accurate results. To lessen this threat, the MEJ was administered first. This lessened the risk of inaccurate data regarding justification beliefs that may have stemmed from recognition of what was being studied. Notifying participants that data would remain anonymous, with no identifying data ever being collected, further minimized the risk of report bias.

Significance

This study addressed the gap between research which stated that adopting a vegetarian/vegan diet often carries social relationship consequences and research which illustrated that beliefs individuals hold about meat consumption can affect their interactions with vegetarians, their views of vegetarians, and their acceptance of vegetarian diets. The goal was to identify in what ways those beliefs affected the closeness of the relationships once the diet was adopted. Positive social strategies that could be used in therapy settings might develop from a greater understanding of how these beliefs impacted the ability to maintain positive social relationships with friends, family members, and romantic partners who chose to adopt a vegetarian/vegan diet.

Summary

Vegetarianism has existed for thousands of years. The negative impression of

vegetarianism purported by some of the population has also been documented throughout history. Currently, many vegetarians report negative social consequences to identifying as a vegetarian/vegan (Beverland et al., 2015; Lerette, 2014; Merriman, 2010; Minson & Monin, 2012; Rothgerber, 2012; Twine, 2014). To understand the existence of these negative repercussions to becoming vegetarian, a greater understanding of omnivore beliefs about meat consumption is warranted. A nonexperimental design using survey methodology was used to look to those justification beliefs for predictors of relationship closeness between omnivores and their vegetarian/vegan friends, family members, and romantic partners. The operational definitions, assumptions, scope, delimitations, and limitations were addressed. The benefit of recognizing how beliefs toward meat consumption can affect omnivore/vegetarian relationships was explored as a possible bridge between those beliefs and the relationship consequences experienced by many who choose to adopt a vegetarian/vegan diet. Chapter 2 reviews the current literature on the theoretical perspectives of the study and the current literature on attitudes toward meat consumption and relationships between vegetarians and omnivores.

Chapter 2: Literature Review

Becoming vegan or vegetarian has a positive impact on both individual health and worldwide environmental issues, including climate change (Macdiarmid et al., 2016), and yet the change often meets with negative social reactions (MacInnis & Hodson, 2015). Thus, it is important to understand the mechanisms at play in the creation of these negative reactions. Negative reactions have been reported to come from strangers, acquaintances, and co-workers (Hirschler, 2011), friends and family members (Twine, 2014), with those reported to be most distressing coming from the latter two (Beverland et al., 2015).

Omnivores' negative comments (Twine, 2014), lack of support (Lindquist, 2013), lessened contact (MacInnis & Hodson, 2015), stigma (Bresnahan, Zhuang, & Zhu, 2016), microagressions (Lerette, 2014), and hostility (Jabs, Sobal, & Devine, 2000) are often experienced by vegetarians; they can be distressing and often damage relationships with family and friends (Twine, 2014). An initial step to understanding why an action that produces positive effects would often elicit negative reactions would be to look at attitudes about both the behavior and the lack of the behavior. Attitudes about participating in a behavior play a part in creating justification beliefs, which individuals incorporate to support (or not support) a behavior (Rothgerber, 2012). Masculine justification beliefs have been shown to correlate with both higher levels of meat consumption and more negative views of vegetarian diets (Rothgerber, 2012). The purpose of the current study was to assess whether a relationship exists between the justification beliefs an omnivore uses for the behavior of meat consumption and the closeness of relationships between vegetarians and their omnivore friends or family members.

Chapter 2 begins with a summary of the literature search followed by a discussion of

the theory of planned behavior and the unified model of vegetarian identity as guiding theoretical perspectives. The chapter continues with a full literature review of the current base of knowledge about how attitudes, subjective norms, personal norms, perceived control and habit relate to meat consumption; about how ambivalence and cognitive dissonance affect attitudes and behavior; about the role of attitudes toward meat consumption in creating justification beliefs; about the role of justification beliefs on attitudes toward vegetarians, and about the effects of vegetarian diet change on relationships.

Literature Search Strategy

This literature review involved an extensive search of the peer-reviewed literature on veganism and vegetarianism as it relates to personal social experiences. The following databases were searched: Academic Search Premier, Eric, Google Scholar, PsycArticles, PsycBooks, PsycInfo, SocInfo, and Thoreau. The bulk of the literature was peer-reviewed with a few books and book chapters. The key terms were *ambivalence*, *attitudes*, *cognitive dissonance*, *eating*, *meat consumption*, *family, friends, meat-eater*, *meat-eating justification*, *omnivore*, *partner*, *relationships*, *social*, *theory of planned behavior*, *vegan*, *veganism*, *vegetarian*, and *vegetarianism*. The focus of the search was between 2005 and the present.

Theoretical Framework

The following theoretical review follows the TPB (Ajzen, 1985) from its origins in the theory of reasoned action. It then discusses adding the dimension of Schwartz's personal norms (Harland, Staats, & Wilke, 1999) and the moderating variable of habit (Trafimow, 2000). Finally, the unified model of vegetarian identity is discussed as it relates to the TPB.

The Theory of Reasoned Action

The theory of reasoned action (TRA) was a theoretical model developed by Fishbein

and Ajzen (Madden, Ellen, & Ajzen, 1992). This theory illustrated the concept that attitude and subjective norm combine to create behavioral intention, which ultimately leads to behavior (Madden et al., 1992). This theory assumed that the best predictor of behavior is intention and that behavior is completely voluntarily controlled (Ajzen, 1991). Attitude is created by combining beliefs held toward the behavior with beliefs held regarding the outcome possibilities and desirability of the possible outcomes of that behavior (Montano & Kasprzyk, 2015). Subjective norm is created from the beliefs held regarding what is normal combined with the subjective motivation toward complying with the norm (Montano & Kasprzyk, 2015). The theory of reasoned action evolved into the theory of planned behavior.

The Theory of Planned Behavior

The TPB expanded upon the theory of reasoned action by adding a third variable of perceived behavioral control to attitude and subjective norm (Ajzen, 1985). The TPB continues with the assumption, set forth in the theory of reasoned action, that intention is the best predictor of behavior, while adding that accurate prediction of intention must also include perceived behavior control, and replaces the assumption that behavior is fully under voluntary control (Montano & Kasprzyk, 2015). Perceived behavioral control is a product of the belief that outside factors exist, which impede or strengthen the behavior and the amount of subjective power one possesses over those factors (Montano & Kasprzyk, 2015). Perceived behavioral control is believed to either strengthen or weaken the behavioral intention depending on the subject's perception of control, thereby resulting in a greater ability to predict behavior (Madden et al., 1992). Perceived control can also lead to an optimistic bias which can result in individuals with the highest perception of control believing risks from behavior to be less than those with lower perceived control (Klein &

Helwig-Larsen, 2002).

There is a substantial body of literature supporting the predictability strength of the TPB (Montano & Kasprzyk, 2015). The theory has been shown to hold even greater predictability when adjusted to include moral obligations and justifications (Stone, Jawahar, & Kisamore, 2009). The finding that justifications and moral obligations were a valuable inclusion when studying intention misconduct in an academic setting warrants the inclusion of justifications as a valuable measure of intention in the current study as it also deals with a morally driven action (Stone et al., 2009).

Personal Norms and Habit as Variables

Personal norms refer to an individual's obligatory self-expectations based on core values (Harland et al., 1999). Within the TPB personal norms would be activated by a sense of responsibility for the possible consequences to another. The resulting feeling of personal obligation (or personal norm) would combine with attitudes, social norms, and perceived behavior control to create behavioral intention (Harland et al., 1999). The addition of the concept of Schwartz's personal norms to the TPB has been rationalized in part due to the realization that the TPB may not account for the variation between those who choose immediate personal gain over the long-term collective benefit and for its strengthening of predictability when applied to pro-environmental behaviors (Harland et al., 1999).

The act of repeating an action has also been shown to play a role in creating both attitude and intention to participate in a behavior. Trafimow (2000) found that although habit, per se, does not explain any significant amount of variance, it is a moderator of both attitudes and intentions. The habit of meat consumption is one that most individuals, including most vegetarians, are raised with from birth, with India as a possible exception (Ruby, Heine,

Kamble, Cheng, & Waddar, 2013). The justification beliefs used in the current study include aspects of personal norms and habit.

The Unified Model of Vegetarian Identity

Rosenfeld and Burrow's (2017) unified model of vegetarian identity (UMVI) incorporates a full spectrum of factors into a measurable level of vegetarian intentionality that is relevant both to omnivores and vegetarians as vegetarian intentionality can fall on the scale anywhere from none to vegan. The UMVI uses 10 dimensions to create an illustration of the many facets of dietary identity (Rosenfeld & Burrow, 2017). The 10 dimensions are broken into contextual dimensions, internalized dimensions, and externalized dimensions (Rosenfeld & Burrow, 2017). The contextual dimensions include historical embeddedness (time period and societal environment one exists within), timing (point during one's lifetime), and duration (length of time one has or has not been vegetarian) (Rosenfeld & Burrow, 2017). The internalized dimension includes salience (situational relevance of vegetarian identity), centrality (where vegetarian identity holds position in one's self-identity), regard (how one evaluates and is evaluated by both omnivores and vegetarians, privately and publicly), and motivation (the reasons one adheres to the chosen diet) (Rosenfeld & Burrow, 2017). The externalized dimensions are dietary pattern (the specific food choices made when dietary control is present), label (the self-disclosed dietary description one gives when referring to oneself), and strictness (the level of adherence to labeled dietary choice) (Rosenfeld & Burrow, 2017). These dimensions are believed to create a tiered measure of the perceived control over dietary choice as well as measuring attitudes toward vegetarianism and the subjective norms of eating and not eating meat (Rosenfeld & Burrow, 2017).

Attitudes Toward Meat Consumption

Attitudes toward meat consumption are the beliefs one holds about the desirability of participating in the behavior of consuming meat (Rothgerber, 2012). Attitudes toward meat consumption can be related to the perceived health benefits of consuming or not consuming meat. A commonly held meat consumption attitude for omnivores is that it is necessary for the health and growth of the human body (Piazza et al., 2015). In contrast, vegetarians expressed the positive effects of lowered saturated fat and cholesterol on heart function (Janda & Trocchia, 2001), prevention of disease (Lea & Worsley, 2003), and vegan diets have been shown to correlate with lowered anxiety for males and lowered stress for females (Beezhold, Radnitz, Rinne, & DiMatteo, 2015).

Attitudes toward meat consumption may also be based within moral and ethical beliefs. An omnivore may feel that animals are simply here for the purpose of consumption and that it is right and just to consume them (Rothgerber, 2012). This attitude is more likely to be held by older individuals and age has been shown to affect meat-eating attitudes more strongly than gender (Lea & Worsley, 2003). Individuals with right-wing ideological perspectives have been shown to hold attitudes that meat consumption is a desired form of human dominance and is an important aspect in defying cultural change, whereas vegetarianism is seen as a threat to human supremacy (Dhont & Hodson, 2014). The pro-meat attitudes of individuals who are supportive of inequality and hierarchical positioning tend to persist even when negative nutritional information regarding meat is presented (Allen & Hung Ng, 2003).

In the same way that omnivores tend to hold moral attitudes relating to human social dominance, vegetarians' moral attitudes tend to align with social justice, equality, and peace

(Allen, Wilson, Hung Ng, & Dunne, 2000). These attitudes, along with pro-environmental attitudes, are significantly more likely to be endorsed by vegetarians under the age of 41 (Pribis, Pencak, & Grajales, 2010). Those who choose vegetarianism for moral reasons (Herzog, 2014), and especially for those who believe in animal rights rather than simply animal concerns, are more likely to maintain a vegetarian diet (Menzies & Sheeshka, 2012) as their morals and behaviors become aligned (Rozin, Markwith, & Stoess, 1997). Diet type tends to correlate with the amount of moral concern one holds for animals and the level of mind capabilities that is attributed to the animals (Piazza et al., 2015). Similarly, in a study of child-vegetarians, aged 6-10 years old, children who chose vegetarianism independently of their parents stated animal welfare concerns in relation to their choice (Hussar & Harris, 2010). It has been documented that individuals who choose vegetarianism for ethical reasons have greater activity in empathy related areas of the brain when observing images depicting suffering of humans and animals, as measured by magnetic resonance imaging, than do omnivores (Felippi et al., 2010).

Environmental attitudes overlap with meat consumption attitudes. The current recognition of the substantial impact of meat-consumption on climate change (Graham & Abrahamse, 2017), water depletion (Mekonnen & Hoekstra, 2012), non-human animal cruelty (Cudworth, 2015), ocean dead zones (Diaz & Rosenberg, 2008), loss of biodiversity (Machovina, Feeley, & Ripple, 2015) and rainforest deforestation (Rodrigues et al., 2012) illustrate the relationship between meat production and environmental consequences. Vegetarians often cite environmental factors as considerations to their dietary choices, however, unlike initial motivations, such as health and moral attitudes; the environment tends to be a secondary motivator whose importance grows over time after vegetarianism has been

adopted (Fox & Ward, 2008). Omnivores are less likely to possess an awareness of the connection between meat consumption and environmental concern, and some doubt the existence of an environmental impact at all (Macdiarmid et al., 2016). In a university population, very few participants were found to agree with statements regarding the positive impact of a vegetarian diet on the environment and most were more willing to make concessions to reduce food waste, recycle, or conserve water, than were willing to reduce meat consumption (Campbell-Arvai, 2015). Discussing the consequences to the environment that result from animal agriculture, prior to discussing views toward meat reduction, had no significant effect for omnivores (Macdiarmid et al., 2016).

Ambivalence and Cognitive Dissonance

The ability of attitudes to predict behavior is strongest in the absence of ambivalence (Povey et al., 2001). Ambivalence is what occurs when an individual simultaneously holds conflicting beliefs (Berndsen & Van der Pligt, 2004). For example, as citizens, people tend to hold beliefs that often show concern for animals however, as consumers, people tend to disconnect animals from the products they purchase (Schroder & McEachern, 2004). Attitudes toward pig farming cruelty and environmental impact of pig farming were shown to be only weakly correlated with level of pork consumption (Krystallis, Dutra de Barcellos, Kugler, Verbeke, & Grunert, 2009). In addition, in a study examining attitudes toward egg production, researchers found a lack of consistency regarding negative attitudes toward battery egg production and egg purchasing behavior. While three-fourths of individuals sampled held negative attitudes toward battery egg production, cage free eggs only accounted for one-third of sales (Schroder & McEachern, 2004). It has even been noted that some meat-eaters knowingly view themselves as inconsistent for holding positive views toward animals

and negative views toward slaughter, yet regularly consume meat (Norton, 2009).

To alleviate the discomfort of ambivalence regarding the conflict of meat consumption some individuals categorize certain animals as food while others are categorized in different ways (Bratanova, Loughnan, & Bastian, 2011). Loughnan et al. (2010) found that a group given meat prior to an administration of a questionnaire, expressed less moral concern for animals than did a group who was not given meat prior to questionnaire administration, illustrating that the behavior of consuming meat created a change in attitude toward animals. Ambivalence toward meat consumption behavior has been shown to be more common for women than for men when defined as simultaneously holding at least one positive and one negative attitude (Ruby et al., 2016). Despite the negative effect of ambivalence on the predictive relationship of attitudes to behavior, the presence of ambivalence does correlate with lessened current and planned future meat consumption (Berndsen & Van der Pligt, 2004; Povey et al., 2001).

Cognitive dissonance is like ambivalence, but rather than being defined as possessing conflicting attitudes, it involves conflicting attitudes that are simultaneously relevant at the time of the behavior (Greenwald & Ronis, 1978). Cognitive dissonance would occur when the conflicting feelings are salient at the time the behavior is being engaged in. Loughnan et al. (2010) discuss the existence of a *meat paradox* whereby people enjoy eating meat while simultaneously disliking harming animals, which can occur by holding them as unrelated beliefs. Despite omnivores having more positive views toward animals than toward meat consumption, they are able to hold those beliefs without experiencing cognitive dissonance when they are not forced to hold both attitudes simultaneously during meat consumption (Norton, 2009). For individuals who experience cognitive dissonance, future alleviation

would require that either the attitude toward the food or the attitude toward the animal be altered (Loughnan et al., 2010). However, changing the attitude in response to cognitive dissonance has been shown to be statistically ineffective, which suggests that attitude change may be a more complex process (Norton, 2009).

Subjective and Personal Norms of Meat Consumption

Subjective norms relate to how an individual perceives that others view a behavior and the desirability to conform (Montano & Kasprzyk, 2015). Many omnivores share the belief that meat consumption is normal (Piazza et al., 2015), which denotes mainstream societal acceptance for the behavior. Vegetarians are often left feeling socially unaccepted by the overwhelmingly negative portrayal of vegans in mainstream media with nearly 75% of 397 articles analyzed expressing negative views toward vegans contrasted by just over 5% positive (Cole & Morgan, 2011) Similarly, in a word association experiment, almost 50% of omnivores associated negative terms to vegetarians, with most falling into the category of socially negative terms such as annoying, crazy, or self-righteous (Minson & Monin, 2012). Omnivores often believe that vegetarians hold negative attitudes (omnivorous regard) toward them based on their meat consumption, and vegetarians may hold negative attitudes (Rosenfeld & Burrow, 2017). However, the level of negativity vegetarians has toward omnivores has been shown to be substantially less than the omnivores perceive it to be (Minson & Monin, 2012). The presence of a vegetarian at a meal table has been shown to negate omnivore comfort (Twine, 2014) and can be perceived as a threat to their moral standing often lowering the omnivores expressed support for meat-eating (Minson & Monin, 2012).

Personal norms are internalized feelings of obligation to participate in a behavior

(Harland et al., 1999). The finding that moral vegetarians are less likely than health vegetarians to exit vegetarianism (Rozin et al., 1997) and that those who believe in animal rights are less likely to exit vegetarianism than are those with animal or environmental concerns (Menzies & Sheeshka, 2012) illustrates that the personal feelings of obligation toward remaining vegetarian is not the same for all vegetarians. When it comes to social interactions those obligatory variations play a role in how strictly vegetarians adhere to their diet during family gatherings (Jabs et al., 2000), when other food options are unavailable (Rosenfeld, & Burrow, 2017), and even in professional settings for researchers (MacDonald & Montford, 2014). In cases where vegetarians experience pressure and choose to consume a product that is not commensurate with his or her diet, it has been shown to cause a greater level of discomfort and guilt in situations where others are aware of the discretion (Jabs et al., 2000). Strictness to maintain dietary choices in the absence of anyone knowing is a dimension of vegetarian identity on the UMVI (Rosenfeld, & Burrow, 2017). Vegetarians with a strict personal obligation to adhere to their diets would be more likely to experience social consequences as a result (Jabs et al., 2000).

Perceived Control and Habit in Relation to Meat Consumption

The concept of perceived control within the theory of planned behavior focuses on how an individual may view his or her ability to participate in or refrain from participating in a behavior (Montano & Kasprzyk, 2015). Attitude was initially believed to be the strongest predictor of adopting a vegetarian diet, however, more recent research points to perceived control over the behavior as a stronger predictor of intention (Povey et al., 2001). One obvious factor related to perceived control would be that both perceived and actual availability of vegetarian food options, affect food choices (Janda & Trocchia, 2001).

Relationships where individuals share living quarters can lower perception of control over avoiding meat consumption (Lea & Worsley, 2003). Conversely, some men report lessened meat consumption if their partners become vegetarian which may support that some omnivores perceive less control over meat consumption when partners are vegetarian (Macdiarmid et al., 2016).

The inclusion of habit as a moderator of attitudes and intentions becomes relevant as omnivores' habit is more strongly correlated with intention than attitude is and habit is a greater predictor of meat consumption than intention to consume (Saba & Di Natale, 1998). Disgust toward meat consumption often reported by vegetarians, actually has been found to arise after one has been vegetarian, rather than having been a factor in the initial dietary choice, thus illustrating that the habit of not consuming meat played a role in changing the attitude toward meat consumption (Rozin et al., 1997).

The Role of Attitudes toward Meat Consumption in Justification Beliefs

The attitudes one holds toward meat consumption, determine the adoption of beliefs that are held to justify the act of eating meat (Rothgerber, 2012). Joy (2010) theorized that three Ns captured the socialized beliefs that support meat consumption. They included necessary (cannot be strong and healthy without meat), natural (humans are meant to), and normal (socially common and expected) (Joy, 2010). A fourth category of nice was later added to account for the attitude of enjoying meat (Piazza et al., 2015). However, the 4 Ns do not explain attitudes that relate to ambivalence or cognitive dissonance. Rothgerber (2012) created categories that break down justification beliefs further, allowing for more specific beliefs to be viewed and accounting for beliefs relating to ambivalence and cognitive dissonance. Rothgerber's (2012) nine belief categories include pro-meat (enjoyment of meat),

denial (animals do not think or feel), hierarchical justification (humans are superior to animals), dichotomization (some animals are pets, some are commodities), dissociation (connection between meat consumption and animals is not allowed to be made), religious justification (animals were put here for human consumption), avoidance (connection between meat and slaughter/suffering is avoided), health justification (meat is needed to be healthy/strong), and human destiny/fate justification (animals are lower on food chain). These categories were created by analyzing trends in past research to differentiate between the ways in which people justify animal consumption (Rothgerber, 2012). This was particularly beneficial as it enabled the combining of information from qualitative and quantitative studies to merge into a structured, quantifiable measure.

Regardless of which belief categories are endorsed, e.g., the 4 Ns or Rothgerber's meat-eating justification categories, men have consistently been shown to consume more meat and to endorse all justification categories except dichotomization, denial, and avoidance to a greater extent than women (Piazza et al., 2015). However, when masculinity is controlled for the variation ceases, suggesting an influence of gender roles on meat-eating justification beliefs (Rothgerber, 2012). A strong positive correlation between masculinity scores as measured by the Male Role Norms Scale and MEJ Scale (see Appendix B) scores has also been found, further supporting the influence of masculinity on justification beliefs (Rothgerber, 2014). Considering masculinity and strength have traditionally been associated with the behavior of meat consumption (Roth, 2005), these findings show that gender role socialization impacts both meat consumption and the justification categories utilized (Rothgerber, 2012).

Effects of Vegetarian Diet Change on Relationships

Vegetarians are often viewed by omnivores as undermining social norms, traditions, and values (MacInnis & Hodson, 2015). Many vegetarians state concerns over being able to create or maintain relationships with omnivores (Edwards, 2013). An initial reduction or ending of contact with family members and or friends is often reported when individuals first disclose their dietary change to vegetarianism (MacInnis & Hodson, 2015). Despite some vegetarians reporting a lessening of negative responses over time, there is a consistent feeling of a lack of understanding from omnivore friends and family (Twine, 2014), in which pre-existing relationships do tend to be negatively impacted due to strained interactions and tensions (Beverland et al., 2015). Lerette (2014) has categorized the negative reactions received by vegetarians from omnivores into three types of microagressions. These include microassaults (intentional avoidance, discrimination, name calling), microinsults (subtle, and possibly subconscious, insults), and microinvalidations (invalidation or exclusion of either the vegetarian or his or her beliefs) (Lerette, 2014). Vegetarians report social gatherings involving food to be the hardest to negotiate with omnivore friends and family due to a lack of understanding, a lack of support, and often hostility (Jabs et al., 2000).

The following studies have examined how vegetarians are viewed by omnivores in terms of how it affects social interactions. Sharing meals has been shown to be a social bonding interaction (Beverland et al., 2015). However, no increase in negative views of vegetarians was found to exist among omnivores with stronger communal food beliefs (Bresnahan et al., 2016), although social gatherings involving food do tend to make vegetarian identities salient (Jabs et al., 2000). The mere presence of a vegetarian has been theorized as eliciting self-conceptual questions in omnivores (Twine, 2014), to create

anticipation of moral reproach (Minson & Monin, 2012), to raise levels of meat-eating justifications (Rothgerber, 2014), and positive vegan messages have been shown to elicit anger, discomfort, and guilt resulting in elevated vegan stigma responses (Bresnahan et al., 2016). Much of the previous research examining issues related to vegetarian diet change and social relationships has been limited to qualitative research (Merriman, 2010; Twine, 2014). Thus, the specific variables that could impact the relationships between omnivores and vegetarians have not been tested.

The Role of Justification Beliefs in Attitudes toward Vegetarians

Individuals whose diets are closest to one's own diet tend to be most favorably viewed, whereas those furthest from one's own tend to be most negatively viewed (Povey et al., 2001). In addition, omnivore views of vegetarians are reliant in part on the motivation of the vegetarian in choosing the diet. That is, omnivores have more favorable views toward those who choose the diet for health reasons and less favorable views toward those who choose the diet for moral reasons (MacInnis & Hodson, 2015). Despite the less favorable views from omnivores, moral vegetarians are less likely to return to an omnivore diet than are health motivated vegetarians (Rozin et al., 1997). Omnivores have been shown to produce neutral or positive responses toward vegetarians when a health benefit message is presented with the discussion of a vegetarian diet, whereas, neutral or negative reactions resulted when a moral message is discussed in relation to a vegetarian diet (Bresnahan et al., 2016). MacInnis and Hodson (2015) found that vegetarians are regarded by omnivores at the same level as other marginalized groups; with blacks being the group regarded at the most similar level. In addition, individuals with other food restrictions, adhered to for health reasons rather than moral reasons, are regarded at a higher level (MacInnis & Hodson, 2015).

Social relationships with omnivores may be impacted by the role of masculinity as it pertains to meat consumption justification (Merriman, 2010; Rothgerber, 2012). Just as individuals with high masculinity were found to consume more meat and endorsed more justifications for the behavior (Rothgerber, 2012), there appears to be a gender aspect regarding relationship consequences when an individual becomes vegetarian (Merriman, 2010). In a qualitative study, Merriman (2010) found that females predominately reported negative responses to becoming vegetarian, nearly exclusively from male friends or family members, whereas males reported very few negative responses from male or female friends and family members when they became vegetarian. Merriman (2010) suggested that a double standard appeared to exist in which women were viewed as less capable of autonomous decision-making with regards to their own dietary choices than were their male counterparts (Merriman, 2010). The problem with this and other qualitative research on this topic is that qualitative research cannot make conclusive statements between variables.

Berscheid, Snyder, and Omoto (2004) found that the amount of time spent together coupled with the number of varied activities engaged in provide a way to view the overall closeness of a relationship. The lessened amount of contact with omnivore friends and family that is reported by vegetarians (MacInnis & Hodson, 2015; Twine, 2014) in conjunction with the added challenges of participating in activities that involve eating with omnivore friends and family (Jabs et al., 2000), support a possibility that relationship closeness with omnivore friends and family may be impacted when an individual chooses a vegetarian diet. Based on the implications that gender (Merriman, 2010) and masculinity (Rothgerber, 2012) negatively affect relationships and attitudes toward vegetarians, it would be beneficial to determine if masculine meat-eating justification beliefs would affect relationship closeness.

Summary and Conclusions

The literature supports that the attitudes, norms, perceived control, and habits that combine to create behavioral intention for meat consumption, also play a role in the formation of justification beliefs used to justify participation in the behavior of meat consumption. The justification beliefs utilized by individuals have been shown to be correlated with levels of masculinity, with certain justification beliefs being more strongly endorsed as masculinity scores increase (Rothgerber, 2012). The literature also supports that the reactions toward vegetarians are at least in part related to the gender of both the vegetarian and the omnivore (Merriman, 2010). Previous research regarding relationships between omnivores and vegetarians has been predominantly qualitative in design, whereas the previous research regarding attitudes toward meat consumption tended to be quantitative in design. This supports using a nonexperimental qualitative design to examine the impact of attitudes toward meat consumption on relationship closeness. Chapter 3 provides a description of the study's methodology, including research design and rationale, and the data analysis strategies.

Chapter 3: Methodology

The purpose of the current study was to examine the role of omnivore justification beliefs on closeness of relationship with vegetarian friends, family and romantic partners. Chapter 3 looks at the research design as well as the rationale behind the design. The methodology will be discussed in terms of the selection of participants, the instruments that were used to measure the variables, how the data were analyzed, and any threats to validity. Ethical procedures are also explained.

Research Design and Rationale

The current study used a cross-sectional, descriptive design with a survey-based methodology. The following variables were compared: omnivore justification beliefs, closeness of relationship, diet type, and personal relationship type. The variable of omnivore justification beliefs was divided into nine categories that have been determined to be justification beliefs, according to Rothgerber (2012): pro-meat, denial, hierarchical justification, dichotomization, dissociation, religious justification, avoidance, health justification, and human destiny/fate justification. The choice to use these categories, rather than those of Joy (2010) or Piazza et al. (2015), was made to account for the categories of avoidance and denial, which are not included in Joy (2010) or Piazza et al. (2015), and the category of enjoyment, which is not accounted for in Joy (2010). Relationship closeness was measured by the RCI, using the scales of frequency of contact, diversity of activities during contact, strength of influence, and total relationship closeness (a combination score of frequency, diversity, and strength; Berscheid et al., 2004). The RCI was administered once, with the directive to answer regarding the relationship as it was during the time in which the friend, family member, or romantic partner were still an omnivore; it was administered a

second time with the directive to answer regarding the current relationship with the vegetarian/vegan friend, family member, or romantic partner. Diet type (prior to and since change to vegetarian diet) refers to the diet of the friend, family member, or romantic partner. Relationship type was separated into three categories, defined as friend, family member, and romantic partner. Romantic partner included boyfriend/girlfriend and husband/wife. The retrospective aspect of the research design was chosen because a longitudinal study would require additional time and resources. The nonexperimental, quantitative design was chosen to determine the impact of specific variables on the closeness of relationships with vegetarians while adding to the existing qualitative research on relationship changes when a person switches to a vegetarian diet.

Methodology

Population

Initially, the target population for this study was American omnivores with a friend, family member, or romantic partner who had become vegetarian/vegan within at least 6 months, but no longer than 5 years prior to the study. The initial decision to use a strictly American population was due to the likelihood that justification beliefs have a societal context. Using participants from various countries would unnecessarily add to the complexity of the variable. But in order to obtain the required sample size, the decision was made to include other English-speaking countries with a similar culture. The additional countries were Canada, Australia, and Great Britain. The size of the target population was unknown; however, according to a 2016 Harris poll, there are approximately 8 million adult vegetarians in the United States (Stahler, 2016). Friends, family members, and romantic partners of those vegetarians who became vegetarian/vegan within the 4.5-year window would be a member of

the target population. Adding three countries to the sampling population raised the target population to include friends, family members and romantic partners of those who adopted vegetarian/vegan diets within the timeframe for those countries as well.

Sampling and Sampling Procedures

Participants were recruited from a convenience sample from Walden University's participant pool and from social media (Facebook) that fit the inclusion criteria. Participant requirements included being a citizen of the United States, Canada, Australia, or GreatBritain, over 18 years of age, with a current friend, family member, or romantic partner who adopted a vegetarian diet at least six months but not more than five years prior to the study, and who was still maintaining the diet at the time of the study. Exclusion from the study occurred in cases where the potential participant was not a citizen of the United States, Canada, Australia, or Great Britain, was under 18, or did not have a friend, family member, or romantic partner that became (and remained) vegetarian within the time frame of no less than six months prior or no more than five years prior.

The software G*Power 3.1.9.2 was used to perform a power analysis for each research question to determine the recommended sample size (Faul, Erdfelder, Buchner, & Lang, 2009). The parameters included in the power analysis for the multiple regression for RQ1 and RQ2 were: (1) an alpha level of 0.05, (2) a statistical power of 0.95, (3) twelve predictor variables, and (4) an anticipated effect size of 0.15. The anticipated effect size of $f^2 = 0.15$ was chosen as it represents a medium effect size for multiple regression (Cohen, 1992) and a medium effect size has been referred to in the literature (Berscheid et al., 1989; Cohen, 1992). The power analysis for the multiple regression produced a recommended sample size of 184 participants. This sample size exceeds the commonly held "rule" that multiple

regression samples need to be ten times the number of variables as well as the minimum sample size of 100 (Maxwell, 2000). It also exceeds the rule of 50 plus eight times the number of variables required for detecting a medium-sized R^2 (Spicer, 2005).

The parameters included in the power analysis for the 2x3 MANOVA for RQ3 and RQ4 were: (a) an alpha level of 0.05, (b) a statistical power of 0.95, (c) six groups, (d) four dependent variables, and (e) an anticipated effect size of 0.25 represents a medium effect size in MANOVA. The power analysis for the MANOVA produced a recommended sample size of 153. As the entire study will be utilizing a single sample, the larger recommended size of 184 was used.

Procedures for Recruitment, Participation, and Data Collection

Approval for the current research study was obtained from Walden University's Institutional Review Board (IRB) prior to onset of data collection [10-05-18-0116041]. A request for participants who fit the criteria was made through the Walden University participant pool. A secondary sample source was gathered from social media (Facebook). A request was made in vegetarian groups asking for vegetarians who fit the sampling criteria to suggest friends, family members, or romantic partners as participants.

Survey Monkey website was used to collect the data until a large enough sample was gathered. Each participant was entered the survey link through a link posted in the Walden participant pool or from a link shared on social media. The link included an informed consent form to be signed electronically, a demographics questionnaire (Appendix A), the Meat-eating Justification Scale (Appendix B), and the Relationship Closeness Scale (Appendix C).

Instrumentation and Operationalization of Constructs

Meat-Eating Justification Scale

The Meat-Eating Justification Scale (MEJ) (see Appendix B) was developed by Rothgerber (2012) to measure the beliefs held by meat eaters supporting the action of consuming animal flesh. The justification beliefs include pro-meat (enjoyment of meat), denial (animals do not think or feel), hierarchical justification (humans are superior to animals), dichotomization (some animals are pets, some are commodities), dissociation (connection between meat consumption and animals is not allowed to be made), religious justification (animals were put here for human consumption), avoidance (connection between meat and slaughter/suffering is avoided), health justification (meat is needed to be healthy/strong), and human destiny/fate justification (animals are lower on food chain). The measure utilizes 27 items such as "We need meat for a healthy diet" and "Animals do not feel pain the same way humans do" using a 9-point Likert scale ranging from 1 (*strongly disagree*) to 9 (*strongly agree*) (Rothgerber, 2012). Nine groups, of three questions each, create scores for each of nine justification beliefs (Rothgerber, 2012).

Internal consistency was found to be strong with an overall Cronbach's alpha of = .85 (Rothgerber, 2012). Individual justification belief subscales were also found to have strong internal consistencies: health justification α = .87, religious justification α = .83, dissociation α = .81, avoidance α = .78, pro-meat α = .77, denial α = .71, hierarchical justification α = .71, human destiny/fate justification α = .55, and dichotomization α = .55 (Rothgerber, 2012). The MEJ measures the beliefs toward meat consumption that have been identified in past research, including the recognized gender differences in those beliefs. The beliefs are not exclusive of each other. Most of the beliefs positively correlate with each other, except for

dichotomization, which does not correlate with the others, and dissociation and avoidance, which negatively correlate with the others (Rothgerber, 2012).

Construct validity has been established regarding the MEJ scale's ability to differentiate between amount of meat consumption. Meat-eating justification scale scores significantly correlated with greater consumption for beef (pro-meat, r = .62; health justification, r = .50; hierarchical justification, r = .47; human destiny/fate justification, r = .46; denial of mind, r = .43; religious justification, r = .36), pork (pro-meat, r = .47; health justification, r = .39; hierarchical justification, r = .48; denial of mind, r = .45), and chicken (pro-meat, r = .49; health justification, r = .43; hierarchical justification, r = .37; human destiny/fate justification, r = .40; denial of mind, r = .35) but not with fish consumption (Rothgerber, 2012). Significant negative correlations with vegetarian consumption were found for pro-meat justification (r = -.68), health justification (r = -.55), hierarchical justification (r = -.44), human destiny/fate justification (r = -.55), denial of mind (r = -.36), and religious justification (r = -.36) (Rothgerber, 2012). Dichotomization, dissociation, and avoidance did not significantly correlate with consumption (Rothgerber, 2012).

Construct validity was also supported in relation to gender variation in that males have been shown to have higher total MEJ scores than females with corresponding elevations in meat consumption (Rothgerber, 2012). The categories identified as masculine have been aligned with acceptance of the male role norms of stoicism, emotional restriction, athleticism, toughness, dominance, and strength (Rothgerber, 2012). Masculinity significantly correlated with the male justification strategies (pro-meat, r = .75; human destiny/fate, r =.69; hierarchical justification, r = .67; health justification, r = .65; denial, r = .61; and religious, r = .59); while negatively relating to the apologetic justifications endorsed more frequently by

females (dissociation, r = -.31, and avoidance, r = -.26) (Rothgerber, 2012). There was no correlation between dichotomization and masculinity (Rothgerber, 2012). The ability of the MEJ to distinguish between beliefs that significantly affect levels of meat consumption, to significantly distinguish between gender and masculinity variations, and to successfully incorporate those variations into standardized beliefs toward the behavior of consuming meat, makes the MEJ a relevant measure to assess the current research questions. The MEJ is in the public domain and does not require permissions to use.

Relationship Closeness Inventory

The RCI (see Appendix C) was developed by Berscheid et al. (1989) to measure the closeness of interpersonal relationships using a conceptualization of closeness discussed by Kelley et al., (1983). This conceptualization focuses of the interdependence of the frequency of interactions, the diversity of interactions, the strength of influence/impact an individual has, and the length of the relationship (Kelley et al., 1983). The original version of the RCI was chosen as it was specifically designed to examine family relationships, friendship relationships, and romantic relationships in terms of closeness in adults of all ages (Berscheid et al., 1989). The RCI was initially tested on a sample of 241 college students, aged 18-49 (Berscheid et al., 1989).

The measure is comprised of a total relationship closeness score that is calculated by combining three subscales: frequency of interactions, diversity of interactions, and strength of influence (Berscheid et al., 1989). The frequency scale utilizes three questions that ask for disclosure of the amount of time, in hours and minutes, spent alone with the chosen individual during the past week categorized by time of day (Berscheid et al., 1989). It also includes a question to determine if the time spent together is typical of the relationship

(Berscheid et al., 1989). The diversity scale is made up of a list of 38 activities. The participant answers yes or no to whether each activity was participated in within the past week, alone, with the friend, family member, or romantic partner (Berscheid et al., 1989). The strength scale is comprised of 34 items on a 7-point Likert scale ranging from 1 (*I strongly disagree)* to 7 (*I strongly agree)* is used to rate the level of influence the chosen individual has over various aspects of the participant's life, such as *my vacation plans* (Berscheid et al., 1989). Additionally, the RCI provides demographic information about the relationship and the individuals in it. This includes the sex (of both individuals), age (of both individuals), type of relationship, and the length the relationship has existed (Berscheid et al., 1989).

The scores for the three scales are converted to standard scores. The three scores range from 1-10 each (Berscheid et al., 1989). This allows the scores to be combined and weighted equally, creating a total relationship closeness score. The RCI was shown to have an overall Cronbach's alpha coefficient of $\alpha = .62$ for all relationship types combined and equally weighted (Berscheid et al., 1989). The subscale internal-consistency reliability scores were frequency $\alpha = .56$, diversity $\alpha = .87$, and strength $\alpha = .90$ (Berscheid et al., 1989). The test-retest reliability coefficient was $r = .82$ for the RCI total score (with subscale test-retest coefficients of: frequency $r = .82$, diversity $r = .61$, strength $r = .81$) after a period of 3-5 weeks (Berscheid et al., 1989).

The construct validity of the RCI was illustrated by significantly discriminating between close and not-close relationships for all three subscales (frequency, diversity, strength) and for total RCI score (Berscheid et al., 1989). A comparison of RCI scores from individuals for their closest relationship and for a current relationship that was not considered

to be close revealed a significant difference, t (63) = 3.59, $p < .001$ (Berscheid et al., 1989). When type of relationship was controlled for, with both the closest and not close relationships falling into the relationship type category of friends, the result was still significant, t (16) = 3.11, $p < .01$ (Berscheid et al., 1989).

Concurrent validity was found in a comparison of the RCI with Rubin's Loving and Liking scales (Rubin, 1973). For self-identified close relationships, a significant correlation (r = .45) was found between the RCI strength scale and the Loving scale. No other correlations were found for close relationships (Berscheid et al., 1989). For self-defined not close relationships significant correlations were found between the RCI total (r = .28) and strength (r = .32) scales with the Liking scale and between the RCI total (r = .59), frequency (r = .39), diversity (r = .45), and strength (r = .58) scales with the Loving scale (Berscheid et al., 1989). This supports that the RCI strength scale captures a similar aspect of relationship closeness to that measured by Rubin's Loving and Liking scales.

The Subjective Closeness Inventory, the Emotional Tone Index, and the Affect for Partner Index were compared to the RCI to gauge how well the RCI accessed those related constructs (Berscheid et al., 1989). Convergent validity for the RCI was found related to affect. Affect was found to be significantly related to closeness for the RCI for all relationships (r = .20) and for romantic relationships (r = .33), but not for family relationships (Berscheid et al., 1989). Those findings for affect were also significant, though higher for subjective closeness (Berscheid et al., 1989). However, subjective closeness was significantly related to affect for friend relationships as well, whereas the RCI was not (Berscheid et al., 1989). This illustrates that the RCI does measure affect, but to a lesser degree than does subjective closeness. In addition to measuring aspects of affect, the RCI measures aspects of

subjective closeness as well as aspects that are not simply subjective. Convergent validity was supported by comparison of the Subjective Closeness Index and the RCI which resulted in a significant correlation of $r = .20$, supporting that the RCI accesses a portion of the closeness involved in subjective determination of closeness (Berscheid et al., 1989). However, when longevity of relationship was added, there was a significant negative correlation ($r = -.19$) which was found to be attributable to long-term friend relationships ($r = -.33$) which despite being subjectively considered close, did not always measure as influential on the RCI (Berscheid et al., 1989).

Research also supports the ability of the RCI to predict dissolution of romantic relationships. A hierarchical regression predicting longevity of relationships was conducting using indexes of longevity, Subjective Closeness Index scores, and Emotional Tone Index scores which resulted in marginal predictability of $R^2 = .10$. When the RCI was added last to the hierarchical regression, the RCI was able to improve upon the predictability by $R^2 = .07$. Performing the hierarchical regression inputting the RCI score first could not improve upon the original predictability of the RCI alone, $r^2 = .12$ (Berscheid et al., 1989). The measure is in the public domain; therefore, no permission was required for its use.

Data Analysis Plan

The data was analyzed using SPSS Statistics edition 24 software. Standard multiple regression analyses were used to assess if relationships exist between omnivore justification beliefs and/or relationship type with the closeness of omnivore/vegetarian relationships. A 2x3 mixed factorial multivariate analysis of variance was used to assess if diet type and/or relationship type influences the closeness of relationships. Missing data was not an issue as the data was gathered in Survey Monkey, requiring that every item be answered prior to

progressing to next. Data was checked for outliers, linear relationships between variables, absence of autocorrelation, normal distribution of residuals, homoscedasticity of data, an absence of multicollinearity, and equality of covariance matrices.

The aim of the study was to (a) assess if relationships exist between omnivore justification beliefs and closeness of omnivore/vegetarian relationships; (b) assess if relationships exist between relationship type and closeness of omnivore/vegetarian relationships; (c) examine if relationship type influences closeness of omnivore/vegetarian relationships; and (d) examine if diet type influences closeness of omnivore/vegetarian relationships.

The following hypotheses were tested to answer the research questions:

Research Question 1: To what extent do omnivores' justification beliefs toward meat consumption (pro-meat, denial, hierarchical, dichotomization, dissociation, religious, avoidance, health, human destiny/fate), as measured by the Meat-Eating Justification scale, relate to closeness of relationships (frequency, diversity, strength, total score) with vegetarians, as measured by the Relationship Closeness Inventory?

H_0: Justification beliefs toward animal consumption are not significant predictors of relationship closeness between omnivores and vegetarians.

H_1: Justification beliefs toward animal consumption are significant predictors of relationship closeness between omnivores and vegetarians.

Research Question 2: To what extent does relationship type (friend, family member, romantic partner) relate to relationship closeness (frequency, diversity, strength, total score) with vegetarians, as measured by the Relationship Closeness Inventory?

H_0: Relationship type (friend, family member, romantic partner) is not a significant predictor of relationship closeness between omnivores and vegetarians.

H_1: Relationship type (friend, family member, romantic partner) is a significant predictor of relationship closeness between omnivores and vegetarians.

Research Question 3: Does relationship type (friend, family member, romantic partner) influence closeness of relationships (frequency, diversity, strength), as measured by the Relationship Closeness Inventory?

H_0: There is no significant difference in closeness of relationships between friends, family members, and romantic partners.

H_1: There is a significant difference in closeness of relationships between friends, family members, and romantic partners.

Research Question 4: Does diet type (prior to and since change to vegetarian diet) influence closeness of relationships (frequency, diversity, strength), as measured by the Relationship Closeness Inventory?

H_0: There is no significant difference in closeness of relationships between omnivores and friends, family members, and romantic partners (before and after dietary change).

H_1: There is a significant difference in closeness of relationships between omnivores and friends, family members, and romantic partners (before and after dietary change).

Research questions one and two were analyzed using standard multiple regression. Multiple regressions determined the relative strength of meat consumption justification beliefs (pro-meat, denial, hierarchical, dichotomization, dissociation, religious, avoidance, health, human destiny/fate) and relationship type (friend, family member, romantic partner)

in predicting the various aspects of closeness of the relationship (frequency, diversity, strength, total RCI score).

Research questions three and four, were analyzed using a 2x3 mixed factorial MANOVA. The between-groups independent variable is the type of relationship (friend, family member, romantic partner). The within-groups independent variable is the type of diet (omnivore, vegetarian). The dependent variables were scored for closeness of relationship (frequency, diversity, strength).

Threats to Validity

External validity involves the ability of results to apply to larger and or other groups, to extend beyond the current timeframe, and to remain when other measures are utilized (Streckler & McLeroy, 2008). The sample for this study came from the Walden University participant pool and from vegetarian social media (Facebook) groups recommending omnivore friends, family members or romantic partners from vegetarians who fit the sampling criteria. Reasonable effort was taken to recruit a sample diverse in ages, economic, and social backgrounds. The choice to restrict the sample to United States citizens was included to eliminate other social and cultural variables. Influences that may affect participants outside of the researcher's control may have included internet or technical issues and personal conflicts or distractions that may have affected an individual's ability to adequately respond to the surveys. Utilizing a sample of convenience limited the results, lessening the applicability to the general population.

Another potential threat is to construct validity and could arose from utilizing an administration of the RCI to be answered from a retrospective viewpoint. A timeframe of no greater than five years was added to the sampling criteria to minimize recall timeframe. Pratt,

McGuigan, and Katzev (2000) stated that in some cases when a measure is used for assessing quality of life at two points in time, a retrospective approach may provide a more accurate assessment. Statistical conclusion validity involves the validity of any conclusions made regarding relationships of statistical variation and co-variation between the variables (Streckler & McLeroy, 2008). Participants were notified that no identifying data would be collected. The MEJ scale was administered first to minimize risk of report bias. A risk to both construct validity and statistical conclusion validity would be an issue to determining whether any score variation for diet type (pre-vegetarian and vegetarian) was in fact a measure of diet change rather than a measure of any other change that may have occurred over the same timeframe. Although it is not possible to control for all other possible variables, the large sample size, the risks of variation falling in both directions equally, and checks for outliers should have helped to diminish any effects on the data. The data collection, methodology, and data analyses choices were made with the goal of alleviating those risks.

Ethical Procedures

Participation was voluntary with no benefit offered for participation. The data collected remained anonymous. No identifying information was gathered. Informed consent releases were electronically signed by all participants prior to the study. The informed consent releases informed participants of the complete anonymity of information. It also reiterated the voluntary status of participation including the ability to withdraw from the study at any time.

Although any potential risks were minimal and unlikely, the possibility of discomfort while answering the surveys was addressed. Contact information for Walden University's Student Assistance Program was included on the informed consent form for participants to

utilize in cases of any anxiety, discomfort, or distress that may occur as a result of participation. All procedures were in accordance with Walden University's Institutional Review Board (IRB). Identifying information was not collected from the participants. This researcher, the Survey Monkey website, and the dissertation chair were the only ones with access to the questionnaires. Data will be retained on the researcher's password protected hard for 5 years, surpassing the 3-year requirement of the Office of Research Integrity (U.S. Department of Health and Human Services, n.d.). The data will be destroyed after 5 years.

Summary

This cross-sectional, descriptive design study utilized a survey-based methodology. The intent of the study was to address the gap between the recognition that the justification beliefs one holds toward the behavior of meat consumption rises in the presence of vegetarians (Rothgerber, 2014) and that negative changes in social relationships are reported by vegetarians upon adoption of the diet (Twine, 2014). The purpose was to examine possible relationships between the beliefs used to justify the consumption of meat with the closeness that results in relationships with vegetarian friends, family members, and romantic partners. The population consisted of citizens of the United States, Great Britain, Canada, or Australia, adhering to an omnivore diet, with at least one friend, family member, and romantic partner who recently converted to vegetarianism. The Walden University participant pool and social media was used to recruit approximately 190 participants. The MEJ and the RCI were used to gather the data that was analyzed using multiple regression and MANOVA tests. In Chapter 4 I discuss the data analysis and results.

Chapter 4: Results

The goal of this study was to look for relationships between omnivores' MEJ beliefs and the relationships they have with vegetarian or vegan friends, family members, or romantic partners. The following research questions and hypotheses guided this study.

Research Question 1: To what extent do omnivores' justification beliefs toward meat consumption (pro-meat, denial, hierarchical, dichotomization, dissociation, religious, avoidance, health, human destiny/fate), as measured by the Meat-Eating Justification scale, relate to closeness of relationships (frequency, diversity, strength, total score) with vegetarians, as measured by the Relationship Closeness Inventory?

H_0: Justification beliefs toward animal consumption are not significant predictors of relationship closeness between omnivores and vegetarians.

H_1: Justification beliefs toward animal consumption are significant predictors of relationship closeness between omnivores and vegetarians.

Research Question 2: To what extent does relationship type (friend, family member, romantic partner) relate to relationship closeness (frequency, diversity, strength, total score) with vegetarians, as measured by the Relationship Closeness Inventory?

H_0: Relationship type (friend, family member, romantic partner) is not a significant predictor of relationship closeness between omnivores and vegetarians.

H_1: Relationship type (friend, family member, romantic partner) is a significant predictor of relationship closeness between omnivores and vegetarians.

Research Question 3: Does relationship type (friend, family member, romantic partner) influence closeness of relationships (frequency, diversity, strength), as measured by the Relationship Closeness Inventory?

H_0: There is no significant difference in closeness of relationships between friends, family members, and romantic partners.

H_1: There is a significant difference in closeness of relationships between friends, family members, and romantic partners.

Research Question 4: Does diet type (prior to and since change to vegetarian diet) influence closeness of relationships (frequency, diversity, strength), as measured by the Relationship Closeness Inventory?

H_0: There is no significant difference in closeness of relationships between omnivores and friends, family members, and romantic partners (before and after dietary change).

H_1: There is a significant difference in closeness of relationships between omnivores and friends, family members, and romantic partners (before and after dietary change).

In this chapter, I present the procedures used for data collection, including the time frames, data collection procedures, and results. The demographic data of the sample participants are presented as well as the external validity of the sample to the population. The chapter also includes a detailed presentation of the results from the multiple regression analyses and the MANOVA analysis.

Data Collection

Data collection began at 9:52 AM on October 20, 2018 and ran continuously until 9:01 AM on May 5, 2019. Data collection commenced with an approved mixed-factorial survey on Survey Monkey. A participant request post was added to the Walden University Participant Pool. An approved posting for participants was then added to Facebook groups. The posting requested vegetarian/vegan group members who adopted their diet between 6

months and 5 years prior to share the survey link with their omnivore friends, family, and romantic partners, age 18 or older, whom they had known prior to the diet change. The original posting included only United States participants. On November 14, 2018, approval was received to include participants from Great Britain, Canada, and Australia in order to obtain a large enough sample; the posting was updated to reflect the requirement change. In order to post the request in Facebook groups, I joined vegetarian/vegan groups from cities, states, and countries within the required demographic areas. Permission to post the survey link was requested from the group admin at the time I joined the groups. I joined and posted to a total of 274 different vegetarian/vegan groups on Facebook.

Results

The descriptive statistics of the sample, the results of the regression analyses, and the results of the MANOVA analyses are presented in this chapter. The descriptive statistics consist of frequencies, percentages, means, and standard deviations for the sample. Standard linear regressions were conducted for the dependent variable of relationship closeness with the independent variables of meat-eating justification and type of relationship. A factorial MANOVA was conducted for closeness of relationships by relationship type and diet type.

Descriptive Statistics

Participants responded to requests on social media or Walden University's participant pool for individuals meeting the criteria for inclusion. There were 831 individuals who began the survey; a total of 258 completed the survey. Of those 258, another 68 were found not to meet the inclusion criteria. A total of 190 participants were included. I was unable to calculate the response rate because I do not know how many vegetarians/vegans from social media shared the post. Then, in addition I do not know how many friends, family members,

and romantic partners received the shared post. All 190 participants reported a friend, family, or romantic partner who adopted a vegetarian or vegan diet within the past five years. Participants also reported to be English speaking citizens of the United States, Canada, Great Britain, or Australia and over the age of 18 at the time of the survey. Participants reported demographic information for themselves (age, education level, gender), their friend/family member/romantic partner (age, gender, time since adopted veg diet), and the characteristics of the relationship (type, length).

The mean age of the omnivore participants (38.71, *SD* = 14.16) was 7.6 years older than the mean age of the vegetarian/vegan (31.12, *SD* = 9.22). Both the gender of the participant and the gender of the vegetarian/vegan were overwhelmingly female (*n* = 123, 64.7%; *n* = 163, 85.8% respectively). The participants were disproportionately educated with 69% reporting a college degree (11.6% Associate; 35.3% Bachelors; 15.8% Masters; 6.3% Professional/Doctorate), 10.5% reported trade school, and 20.5% reported a high school diploma. The most common relationship type was family member (*n* = 81, 42.6%), followed by romantic partner (*n* = 77, 40.5%), with the fewest reporting friend relationships (*n* = 32, 16.8%). The mean length of the relationships was 16 years and 10 months. The mean length of time since the vegetarian/vegan adopted the diet was just over 2 years and 7 months prior to the survey. These demographic characteristics are presented in Table 1.

Means and standard deviations were calculated for the independent variables derived from the MEJ scale, consisting of nine subscales (pro-meat, denial of mind, hierarchical justification, dichotomization, dissociation, religious justification, avoidance, health justification, and human destiny/fate justification). The means and standard deviations were

Table 1

Descriptive Statistics for the Sample

Variable	*n*	%
Age of Participant		
25 and younger	43	22.6
26 - 40	69	36.3
41 and older	78	41.1
Age of Vegetarian/Vegan		
25 and younger	66	34.7
26 - 40	97	51.1
41 and older	27	14.2
Gender of Participant		
male	67	35.3
female	123	64.7
Gender of Vegetarian / Vegan		
male	27	14.2
female	163	85.8
Education Level		
High school or equivalent	39	20.5
Trade school	20	10.5
Associate degree	22	11.6
Bachelor's degree	67	35.3
Master's degree	30	15.8
Professional degree or Doctorate	12	6.3
Time since vegetarian / vegan diet was adopted		
6 months to less than 2 years since	67	35.3
Second and third year since	75	39.4
Fourth and fifth year since	48	25.3
Length of relationship		
Less than 10 years	71	37.4
10 years to 20 years	53	27.9
More than 20 years	66	34.7

also calculated for the dependent variables, consisting of the four scores (frequency, diversity, strength, total closeness) from the RCI under both diet conditions (vegetarian/vegan, omnivore).

Each of the nine subscales of the MEJ scale had possible scores ranging from 3-27. The pro-meat justification belief subscale had a mean score of 12.93 (*SD* = 6.28). The denial

justification belief subscale had a mean score of 8.66 (*SD* = 4.90). The hierarchical justification belief subscale had a mean score of 11.44 (*SD* = 5.86). The dichotomization justification belief subscale had a mean score of 16.68 (*SD* = 5.63). The dissociation justification belief subscale had a mean score of 15.29 (*SD* = 6.95). The religious justification belief subscale had a mean score of 11.95 (*SD* = 6.73). The avoidance justification belief subscale had a mean score of 17.45 (*SD* = 5.80). The health justification belief subscale had a mean score of 10.13 (*SD* = 6.52). The human destiny/fate justification belief subscale had a mean score of 12.18 (*SD* = 5.14).

The RCI consists of three subscales and a total score. The RCI was completed twice: once for the current relationship in which the friend, family member, or romantic partner is vegetarian/vegan and a second time for the relationship when the friend, family member, or romantic partner was still omnivorous. The frequency subscale for the current vegetarian/vegan relationships had a mean score for friends of 3.53 (*SD* = 2.51), a mean score for family members of 3.26 (*SD* = 2.52), a mean score for romantic partners of 6.55 (*SD* = 2.01), and an overall mean score of 4.64 (*SD* = 2.80). The frequency subscale for the past omnivore relationships had a mean score for friends of 4.44 (*SD* = 2.24), a mean score for family members of 3.8 (*SD* = 2.46), a mean score for romantic partners of 6.18 (*SD* = 1.61), and an overall mean score of 4.87 (*SD* = 2.38). The diversity subscale for the current vegetarian/vegan relationships had a mean score for friends of 4.72 (*SD* = 2.29), a mean score for family members of 3.78 (*SD* = 1.78), a mean score for romantic partners of 6.73 (*SD* = 1.68), and an overall mean score of 5.13 (*SD* = 2.28). The diversity subscale for the past omnivore relationships had a mean score for friends of 5.44 (*SD* = 2.65), a mean score for family members of 4.63 (*SD* = 2.12), a mean score for romantic partners of 6.95 (*SD* = 2.01),

and an overall mean score of 5.71 (*SD* = 2.41). The strength subscale for the current vegetarian/vegan relationships had a mean score for friends of 3.75 (*SD* = 1.57), a mean score for family members of 4.15 (*SD* = 1.43), a mean score for romantic partners of 6.75 (*SD* = 1.36), and an overall mean score of 5.14 (*SD* = 1.96). The strength subscale for the past omnivore relationships had a mean score for friends of 3.41 (SD = 1.62), a mean score for family members of 3.93 (*SD* = 1.70), a mean score for romantic partners of 6.25 (*SD* = 1.57), and an overall mean score of 4.78 (*SD* = 2.04). The total score for the current vegetarian/vegan relationships had a mean score for friends of 12 (*SD* = 5.09), a mean score for family members of 11.19 (*SD* = 4.29), a mean score for romantic partners of 20.04 (*SD* = 3.38), and an overall mean score of 14.91 (*SD* = 5.90). The total score for the past omnivore relationships had a mean score for friends of 13.25 (*SD* = 4.96), a mean score for family members of 12.35 (*SD* = 4.61), a mean score for romantic partners of 19.38 (*SD* = 3.35), and an overall mean score of 15.35 (*SD* = 5.36). A summary of the descriptive statistics for the meat-eating justification subscales and relationship closeness are shown in Table 2.

Evaluation of Statistical Assumptions

I assessed the assumptions of normality, homoscedasticity, and multicollinearity prior to conducting the multiple regression analyses. The scores for skewness and kurtosis were compared to established guidelines to assess normality. Guidelines hold that skewness values should be close to zero (below ± 2) and kurtosis values should be near 3 in a normal distribution (Park, 2015). The values for skewness were close to zero and all fell slightly above zero. This illustrates a normal distribution skewed slightly to the right (Park, 2015). The kurtosis scores were lower than 3, close to zero, and negative. This illustrates a low peak with thick tails (Park, 2015). To further assess normality, the Shapiro-Wilk test was

Table 2

Descriptive Statistics for Meat-Eating Justification Beliefs and Relationship Closeness

Variable	*M*	*SD*	*n*	Min.	Max.
MEJ Meat-Eating Justification Beliefs					
Pro-Meat Justification	12.93	6.28	190	3	27
Denial Justification	8.66	4.90	190	3	22
Hierarchical Justification	11.44	5.86	190	3	27
Dichotomization Justification	16.68	5.63	190	3	27
Dissociation Justification	15.29	6.95	190	3	27
Religious Justification	11.95	6.73	190	3	27
Avoidance Justification	17.45	5.80	190	3	27
Health Justification	10.13	6.52	190	3	27
Human Destiny/Fate Justification	12.18	5.14	190	3	27
RCI Relationship Closeness					
Vegetarian/Omnivore Relationship					
Frequency	4.64	2.80	190	1	10
Diversity	5.13	2.28	190	1	10
Strength	5.14	1.96	190	1	9
Total Closeness	14.91	5.90	190	3	27
Omnivore/Omnivore Relationship					
Frequency	4.87	2.38	190	1	10
Diversity	5.71	2.41	190	1	10
Strength	4.78	5.36	190	1	10
Total Closeness	15.35	.72	190	3	26

performed. The results supported a normal distribution. The results for all normality tests performed are illustrated in Table 3.

Homoscedasticity was assessed using scatterplots. The points appear to be distributed around the mean value of zero. For the dependent variables of frequency, diversity, strength, and total closeness, a heavy presence of responses in the middle was not observed but rather a heaviness of responses of each side of zero. The dependent variable of diversity was more evenly distributed around the mean of zero. There was an overall distribution of points around the mean of zero. Thus, the assumption of homoscedasticity was met. Figures 1-4 present the residual scatterplots for each dependent variable.

Table 3

Results of the Normality Testing for the Meat-Eating Justification Scale and the Relationship Closeness Inventory

Variable	Statistic	*df*	*p*	Skewness	Kurtosis
Meat-Eating Justification					
Pro-meat Justification	.966	189	.000	.088	-.775
Denial Justification	.918	189	.000	.568	-.581
Hierarchical Justification	.959	189	.000	.243	-.797
Dichotomization Justification	.974	189	.001	-.197	-.726
Dissociation Justification	.960	189	.000	-.148	-.816
Religious Justification	.931	189	.000	.209	-.895
Avoidance Justification	.971	189	.001	-.386	-.378
Health Justification	.903	189	.000	.739	-.342
Human Destiny/Fate Justification	.978	189	.004	.255	-.040
Relationship Closeness					
Vegetarian/Vegan Diet					
Frequency	.909	189	.000	.068	-1.109
Diversity	.967	189	.000	.062	-.642
Strength	.964	189	.000	-.014	-.686
Total Closeness	.968	189	.000	-.090	-1.045
Omnivore Diet					
Frequency	.931	189	.000	-.254	-.750
Diversity	.963	189	.000	-.163	-.744
Strength	.968	189	.000	.118	-.590
Total Closeness	.973	189	.001	-.369	-.564

Cronbach's alpha was performed to determine internal consistency of the measures. The reliability coefficient was calculated for MEJS ($\alpha = 0.86$) and the subscales of pro-meat ($\alpha = 0.83$), denial ($\alpha = 0.84$), hierarchical ($\alpha = 0.82$), dichotomization ($\alpha = 0.84$), dissociation ($\alpha = 0.86$), religious ($\alpha = 0.83$), avoidance ($\alpha = 0.87$), health ($\alpha = 0.83$), and human destiny/fate (α=0.83). The reliability coefficient was then calculated for the RCI ($\alpha = 0.90$) and the subscales at both administrations for frequency ($\alpha = 0.89$, $\alpha = 0.89$), diversity ($\alpha = 0.89$, $\alpha = 0.89$), strength ($\alpha = 0.90$, $\alpha = 0.90$), and total closeness ($\alpha = 0.88$, $\alpha = 0.88$). The coefficients all fell between the reported acceptable range of 0.70 - 0.95 with all scores at

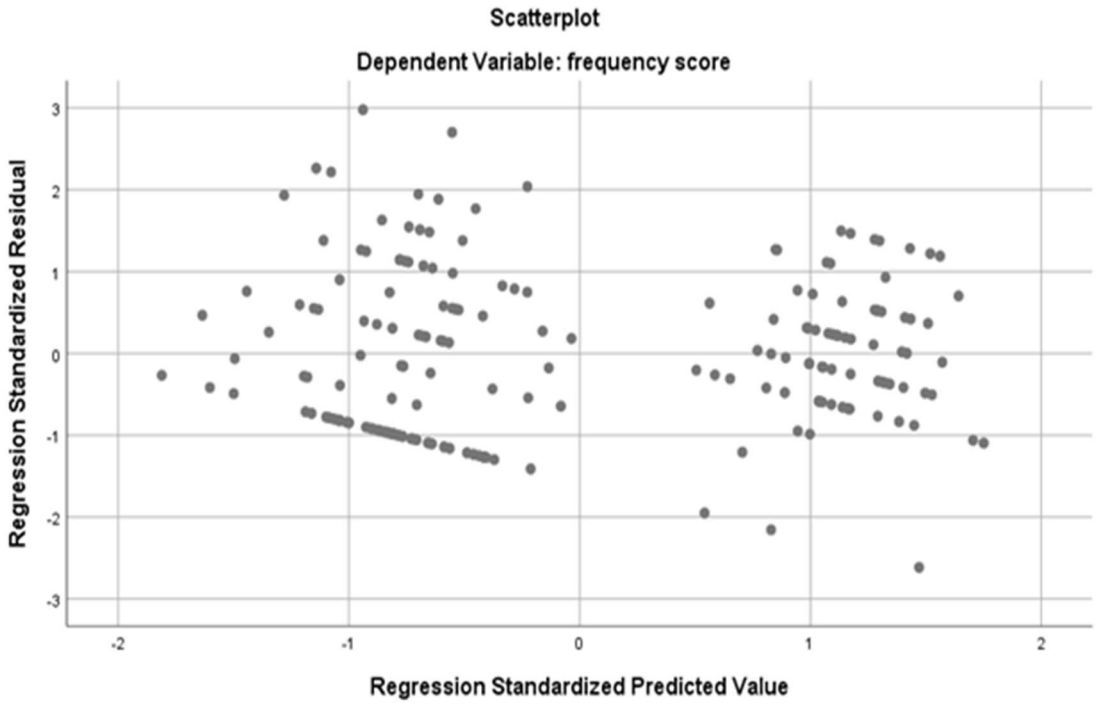

Figure 1. Residual scatterplot for homoscedasticity for frequency.

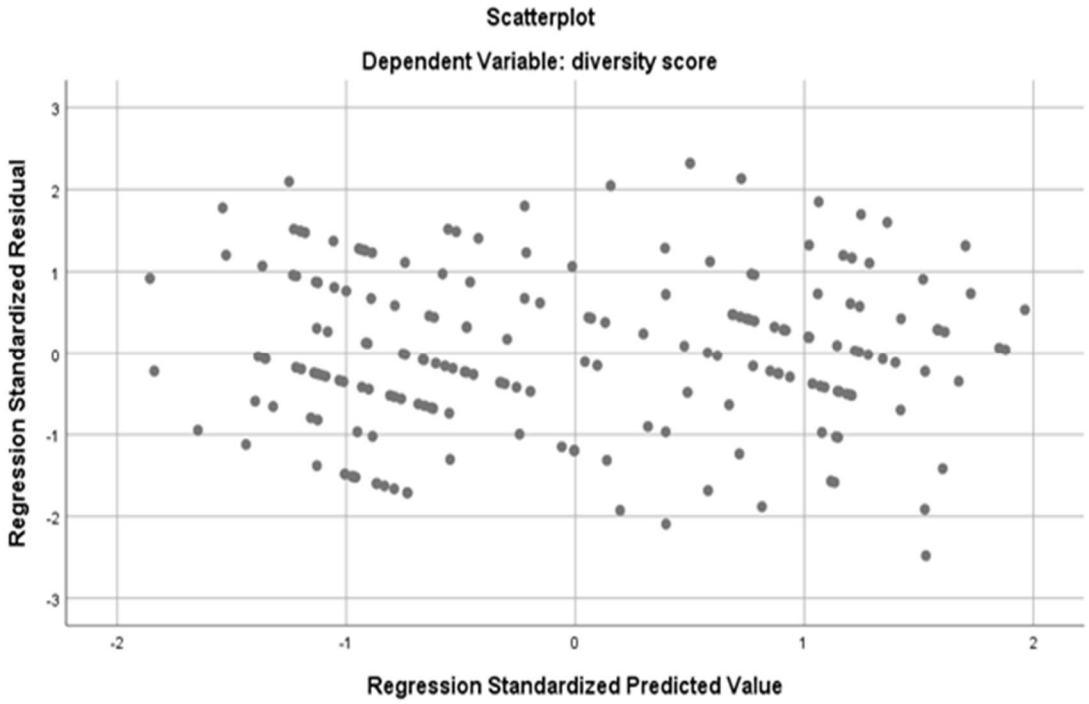

Figure 2. Residual scatterplot for homoscedasticity for diversity.

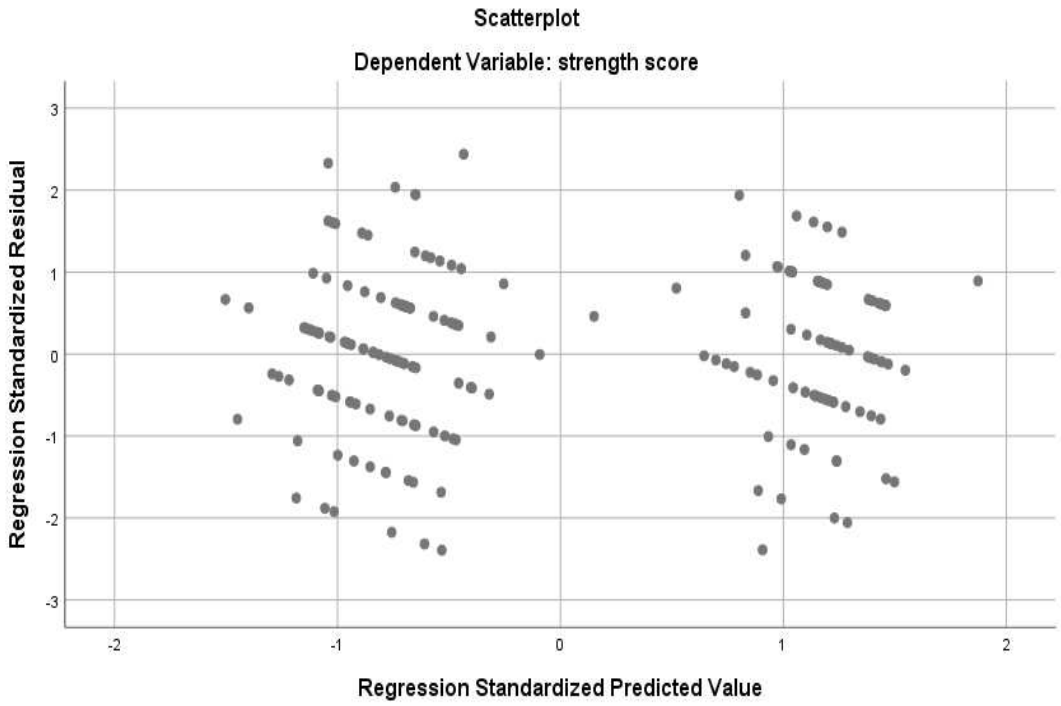

Figure 3. Residual scatterplot for homoscedasticity for strength.

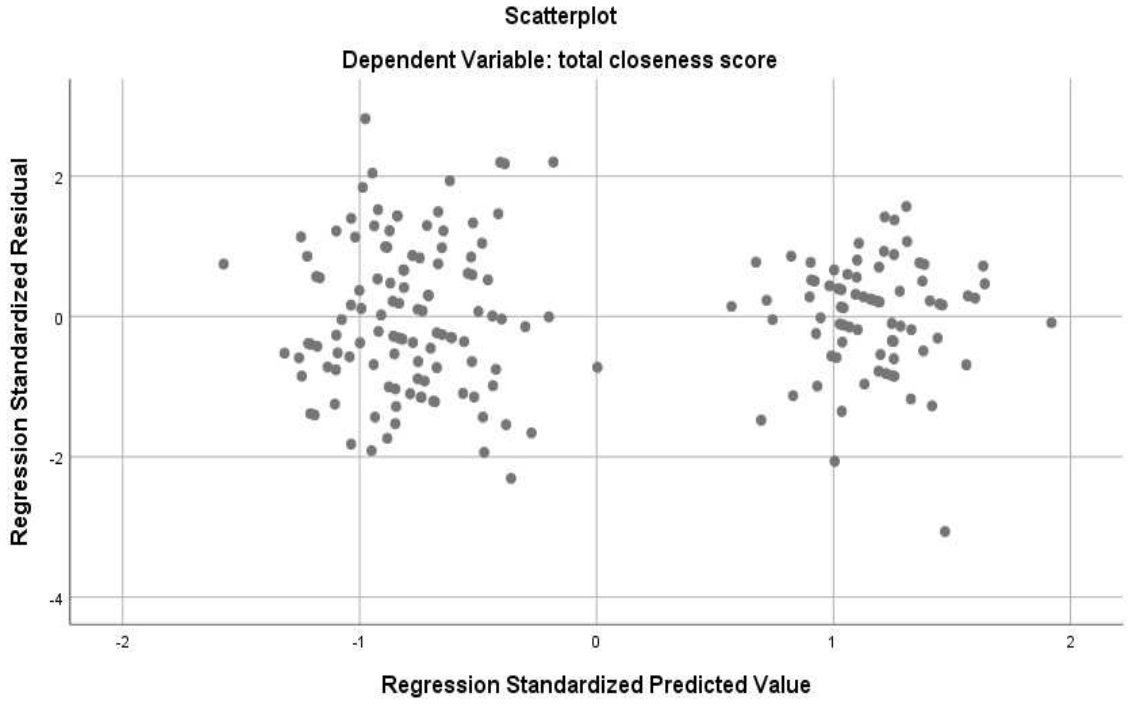

Figure 4. Residual scatterplot for homoscedasticity for total closeness.

0.90 or less, reducing the scale risks of question redundancy (Tavakol & Dennick, 2011). Variance Inflation Factors (VIFs) were calculated for the predictor variables. The variable family member was removed from the multiple regression analyses by SPSS as it did not contribute to the model. The remaining eleven predictors were well below the rule of thumb of a VIF value of less than 10 (Curto & Pinto, 2010). Table 4 presents the VIF values for the predictor variables.

Table 4

VIF Values for the Predictor Variables

Variable	*VIF*
MEJ – Pro-Meat Justification	2.55
MEJ – Denial Justification	2.50
MEJ – Hierarchal Justification	4.65
MEJ – Dichotomization Justification	1.59
MEJ – Dissociation Justification	2.37
MEJ – Religious Justification	2.25
MEJ – Avoidance Justification	2.28
MEJ – Health Justification	2.59
MEJ – Human Destiny/Fate Justification	2.86
Friend	1.19
Romantic Partner	1.27

The assumptions of homogeneity of variance/covariance matrices, linearity, and singularity were assessed for the MANOVA. A Box's M test was calculated to assess the homogeneity of variance/covariance matrices. It produced a Box's M value of 69.755 and a corresponding *p* value score of .011 interpreted as non-significant as it is above the critical value of .001 (Mertler & Reinhart, 2017). The covariance matrices were therefore assumed to be equal for the purposes of the MANOVA. To satisfy the assumption of singularity, only the subscales of the Relationship Closeness Inventory were utilized in the MANOVA as the total is derived from the subscales and would therefore violate the assumption of singularity

(Pallant, 2010). Scatterplot matrices were created for the dependent variables to ensure linear relationships. They illustrate linear relationships for each set of dependent variables, so linearity can be assumed (see Figures 5 and 6).

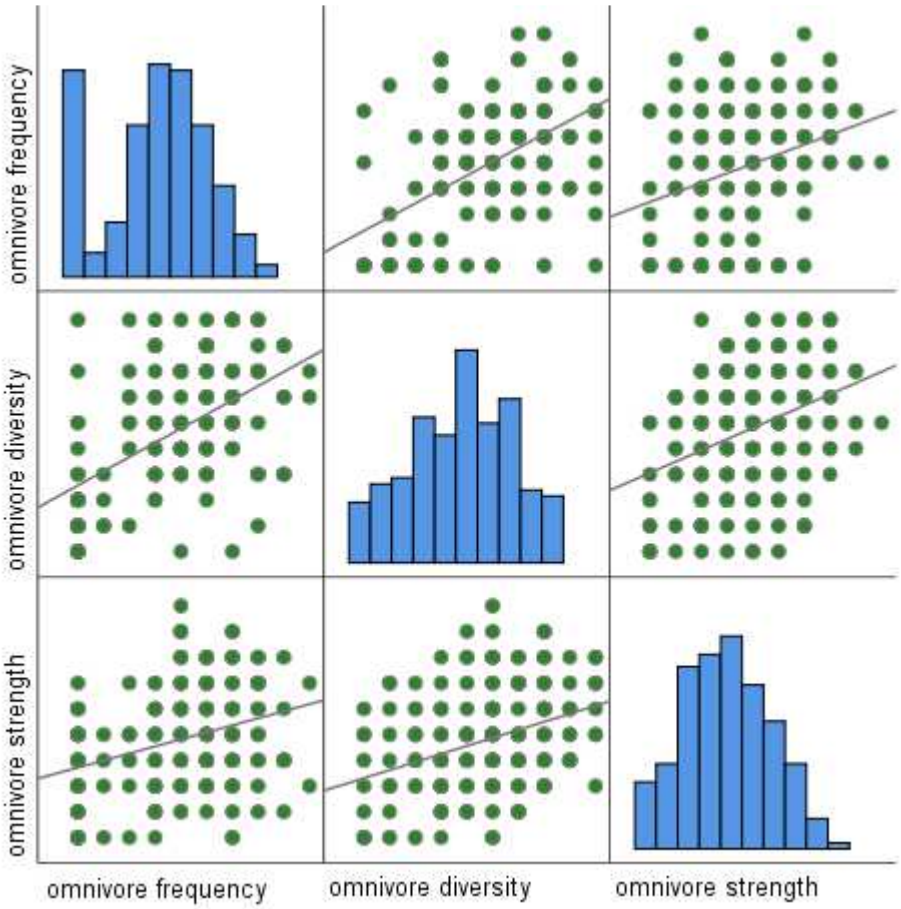

Figure 5. Scatterplot matrix - Subscales for relationships with friend, family member, or romantic partner when they were omnivores.

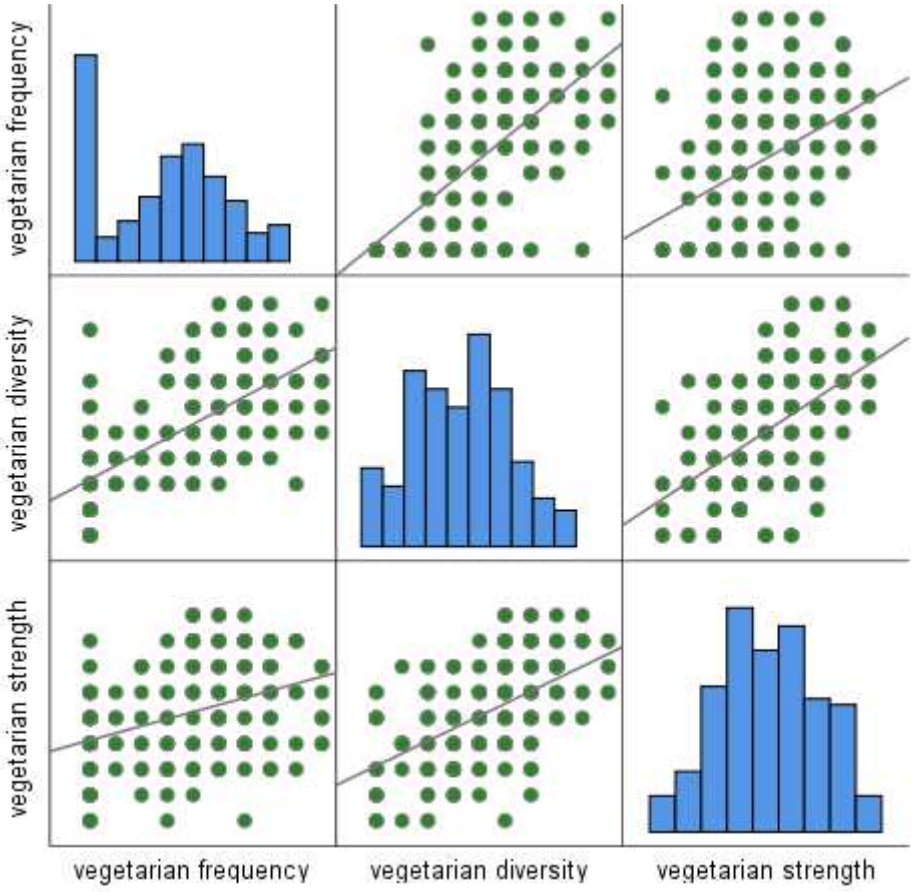

Figure 6. Scatterplot matrix - Subscales for current relationships with vegetarian friend, family member, or romantic partner.

Multiple Regression Analysis

I performed multiple linear regression analyses to address research questions one and two. The predictor variables that were included in the regression model were meat-eating justification beliefs (pro-meat, denial, hierarchical, dichotomization, dissociation, religious, avoidance, health, human destiny/fate) and relationship types (friend, family member, romantic partner). The dependent variable was relationship closeness and its subscales of frequency, diversity, and strength. Four multiple linear regression analyses were performed, one for each subscale and one for the total closeness score.

Multiple Regression 1: Meat-Eating Justification Beliefs and Relationship Types as Predictors of Relationship Closeness (Frequency Subscale)

I conducted a multiple linear regression analysis to assess the predictor variables relationship to the relationship closeness subscale of frequency. The predictor variables used in the multiple linear regression were meat-eating justification beliefs (pro-meat, denial, hierarchical, dichotomization, dissociation, religious, avoidance, health, human destiny/fate) and relationship types (friend, family member, romantic partner). The result of the multiple linear regression was that the overall model was statistically significant, F (11, 178) = 8.79, $p < .05$, $R^2 = 0.35$. The model accounted for 35% of the variation in relationship closeness (frequency subscale).

The only significant predictor of relationship closeness (frequency subscale) was romantic partner, $B = 3.29$, $p < .05$. The results were that for romantic partner there was 3.29 per unit increase in frequency of interactions. The results are presented in Table 5.

Table 5

Results of the Multiple Linear Regression Predicting Frequency of Interactions in Relationship Closeness with Meat-Eating Justification Beliefs and Relationship Type

Variable	*B*	*SE*	β	*t*	*p*
MEJ-Pro-Meat Justification	.002	.043	.004	.038	.970
MEJ-Denial Justification	-.062	.055	-.109	-1.142	.255
MEJ-Hierarchical Justification	.440	.062	.092	.707	.480
MEJ-Dichotomization Justification	.049	.038	.099	1.302	.194
MEJ-Dissociation Justification	.029	.038	.072	.775	.439
MEJ-Religious Justification	-.002	.038	-.005	-.054	.957
MEJ-Avoidance Justification	-.035	.044	-.073	-.801	.424
MEJ-Health Justification	.008	.042	.019	.198	.843
MEJ-Human Destiny/Fate Justification	-.105	.056	-.192	-1.878	.062
Friend	.364	.491	.049	.740	.460
Romantic Partner	3.292	.387	.578	8.504	.000

Multiple Regression 2: Meat-Eating Justification Beliefs and Relationship Types as Predictors of Relationship Closeness (Diversity Subscale)

I conducted a multiple linear regression analysis to assess the predictor variables relationship to the relationship closeness subscale of diversity. The predictor variables used in the multiple linear regression were meat-eating justification beliefs (pro-meat, denial, hierarchical, dichotomization, dissociation, religious, avoidance, health, human destiny/fate) and relationship types (friend, family member, romantic partner). The result of the multiple linear regression was that the overall model was statistically significant, F (11, 178) = 12.04, $p < .05$, $R^2 = 0.43$. The model accounted for 43% of the variation in relationship closeness (diversity subscale).

The meat-eating justification subscales of denial, hierarchical, and dissociation were significant predictors of relationship closeness (diversity subscale). Denial justification was a statistically significant predictor of relationship closeness (diversity subscale), $B = -0.11$, $p < .05$. The results indicated that for every one-unit increase in denial justification there was a

0.11 unit decrease in relationship closeness (diversity subscale). Hierarchical justification was a statistically significant predictor of relationship closeness (diversity subscale), B = 0.12, $p < .05$. The results indicated that for every one-unit increase in hierarchical justification there was a 0.12 unit increase in relationship closeness (diversity subscale). Dissociation justification was a statistically significant predictor of relationship closeness (diversity subscale), B = -0.08, $p < .05$. The results indicated that for every one-unit increase in dissociation justification there was a 0.08 unit decrease in relationship closeness (diversity subscale).

Both relationship types of friend and romantic partner were predictors of relationship closeness (diversity subscale). For friend, B = 0.93, $p < .05$, there was a 0.93 per unit increase in diversity of interactions. For romantic partner, B = 2.81, $p < .05$, there was a 2.81 per unit increase in diversity of interactions. The results are presented in Table 6.

Table 6

Results of the Multiple Linear Regression Predicting Diversity of Interactions in Relationship Closeness with Meat-Eating Justification Beliefs and Relationship Type

Variable	*B*	*SE*	β	*t*	*p*
MEJ-Pro-Meat Justification	-.037	.033	-.101	-1.119	.265
MEJ-Denial Justification	-.112	.042	-.242	-2.694	.008
MEJ-Hierarchical Justification	.122	.048	.315	2.575	.011
MEJ-Dichotomization Justification	.008	.029	.019	.263	.793
MEJ-Dissociation Justification	-.075	.029	-.228	-2.613	.010
MEJ-Religious Justification	-.033	.029	-.097	-1.135	.258
MEJ-Avoidance Justification	.045	.034	.115	1.342	.181
MEJ-Health Justification	.009	.032	.025	.272	.786
MEJ-Human Destiny/Fate Justification	-.020	.043	-.044	-.460	.646
Friend	.928	.375	.153	2.472	.014
Romantic Partner	2.806	.296	.607	9.490	.000

Multiple Regression 3: Meat-Eating Justification Beliefs and Relationship Types as Predictors of Relationship Closeness (Strength Subscale)

I conducted a multiple linear regression analysis to assess the predictor variables relationship to the relationship closeness subscale of strength. The predictor variables used in the multiple linear regression were meat-eating justification beliefs (pro-meat, denial, hierarchical, dichotomization, dissociation, religious, avoidance, health, human destiny/fate) and relationship types (friend, family member, romantic partner). The result of the multiple linear regression was that the overall model was statistically significant, F (11, 178) = 16.36, $p < .05$, $R^2 = 0.50$. The model accounted for 50% of the variation in relationship closeness (strength subscale).

The only significant predictor of relationship closeness (strength subscale) was romantic partner, $B = 2.57$, $p < .05$. The results show that for romantic partner there was 2.57 per unit increase in strength of relationship. The results are presented in Table 7.

Table 7

Results of the Multiple Linear Regression Predicting Strength of Relationship Closeness with Meat-Eating Justification Beliefs and Relationship Type

Variable	*B*	*SE*	β	*t*	*p*
MEJ-Pro-Meat Justification	-.039	.026	-.124	-1.474	.142
MEJ-Denial Justification	-.057	.033	-.143	-1.707	.089
MEJ-Hierarchical Justification	.054	.038	.161	1.416	.158
MEJ-Dichotomization Justification	-.028	.023	-.081	-1.213	.227
MEJ-Dissociation Justification	-.020	.023	-.071	-.866	.387
MEJ-Religious Justification	.022	.023	.076	.960	.339
MEJ-Avoidance Justification	.016	.027	.047	.595	.553
MEJ-Health Justification	-.011	.026	-.036	-.422	.674
MEJ-Human Destiny/Fate Justification	.007	.034	.018	.203	.840
Friend	-.415	.300	-.080	-1.384	.168
Romantic Partner	2.566	.236	.646	10.853	.000

Multiple Regression 4: Meat-Eating Justification Beliefs and Relationship Types as Predictors of Relationship Closeness (Total Closeness)

I conducted a multiple linear regression analysis to assess the predictor variables relationship to total relationship closeness. The predictor variables used in the multiple linear regression were meat-eating justification beliefs (pro-meat, denial, hierarchical, dichotomization, dissociation, religious, avoidance, health, human destiny/fate) and relationship types (friend, family member, romantic partner). The result of the multiple linear regression was that the overall model was statistically significant, F (11, 178) = 20.401, $p <$ .05, $R^2 = 0.558$. The model accounted for 56% of the variation in relationship closeness.

The meat-eating justification subscales of denial and hierarchical were significant predictors of relationship closeness. Denial justification was a statistically significant predictor of relationship closeness, $B = -0.23$, $p < .05$. The results indicated that for every one-unit increase in denial justification there was a 0.23 unit decrease in relationship closeness. Hierarchical justification was a statistically significant predictor of relationship closeness, $B = 0.22$, $p < .05$. The results indicated that for every one-unit increase in hierarchical justification there was a 0.22 unit increase in relationship closeness.

Romantic partner was the only significant predictor of total relationship closeness. For romantic partner, $B = 8.674$, $p < .05$, there was a 2.806 per unit increase in total relationship closeness. The results are presented in Table 8.

Table 8

Results of the Multiple Linear Regression Predicting Total Relationship Closeness with Meat-Eating Justification Beliefs and Relationship Type

Variable	*B*	*SE*	β	*t*	*p*
MEJ-Pro-Meat Justification	-.074	.075	-.079	-.997	.320
MEJ-Denial Justification	-.232	.095	-.193	-2.445	.015
MEJ-Hierarchical Justification	.220	.108	.219	2.040	.043
MEJ-Dichotomization Justification	.029	.066	.028	.442	.659
MEJ-Dissociation Justification	-.067	.065	-.079	-1.027	.306
MEJ-Religious Justification	-.013	.066	-.015	-.195	.845
MEJ-Avoidance Justification	.026	.076	.026	.344	.731
MEJ-Health Justification	.007	.073	.008	.094	.926
MEJ-Human Destiny/Fate Justification	-.119	.097	-.103	-1.227	.221
Friend	.876	.854	.056	1.026	.306
Romantic Partner	8.674	.672	.724	12.899	.000

Multivariate Analysis of Variance

I conducted a 2x3 mixed factorial MANOVA to address research questions 3 and 4. The independent variables included the between-groups variable of relationship type (friend, family member, romantic partner) and the within-groups variable of diet type (vegetarian/vegan, omnivore). The dependent variable included 3 measures of relationship closeness (frequency, diversity, strength). Pillai's Trace was used due to unequal group sizes.

Main Effect of Relationship Type

There was a statistically significant main effect for relationship type, F (6,372) = 26.746, $p < .000$; Pillai's Trace = 0.603, partial $\eta^2 = .301$. I did pairwise comparisons and found that for the subscale of frequency, romantic partner had a significantly higher mean score ($\bar{X} = 6.36$) compared to friend ($\bar{X} = 3.98$), and family member ($\bar{X} = 3.53$). For the subscale of diversity, friend had a significantly higher mean score ($\bar{X} = 5.08$) compared to family member ($\bar{X} = 4.20$), and romantic partner had a significantly higher mean score ($\bar{X} = 6.84$) than both friend and family member. For the subscale of strength, romantic partner had

a significantly higher mean score ($\bar{X}$ = 6.50) compared to friend ($\bar{X}$ = 3.58) and family member ($\bar{X}$ = 4.04).

Main Effect of Diet Type

There was a statistically significant main effect for diet type, F (3,185) = 15.093, p < .000; Pillai's Trace = 0.197, partial η^2 = .197. I did pairwise comparisons and found that for the subscale of frequency the mean score was significantly higher for omnivore ($\bar{X}$ = 4.81) as compared to when the diet type of vegetarian/vegan was adopted ($\bar{X}$ = 4.45). For the subscale of diversity, the mean score was significantly higher for omnivore ($\bar{X}$ = 5.67) compared to when the diet type of vegetarian/vegan was adopted ($\bar{X}$ = 5.08). For the subscale of strength, the mean score was significantly lower for omnivore ($\bar{X}$ = 4.53) compared to when the diet type of vegetarian/vegan was adopted ($\bar{X}$ = 4.88).

Interaction Effect

There was a statistically significant interaction of relationship type and diet type for relationship closeness, F (6,372) = 2.532, p = .02; Pillai's Trace = 0.078, partial η^2 = .039. A significant interaction between relationship type and diet type was seen for the subscale of frequency, F (2,187) = 6.175, p = .003, partial η^2 = .062. For the relationship types of friend and family member, frequency of interactions was significantly higher before becoming vegetarian/vegan. In contrast, for romantic partner, the frequency of interactions was significantly higher after the vegetarian/vegan diet was adopted (see Figure 7). No significant interactions were found for the subscales of diversity, F (2,187) = 2.811, p = .063, and strength, F (2,187) = 1.320, p = .270 (see Figure 8 and 9).

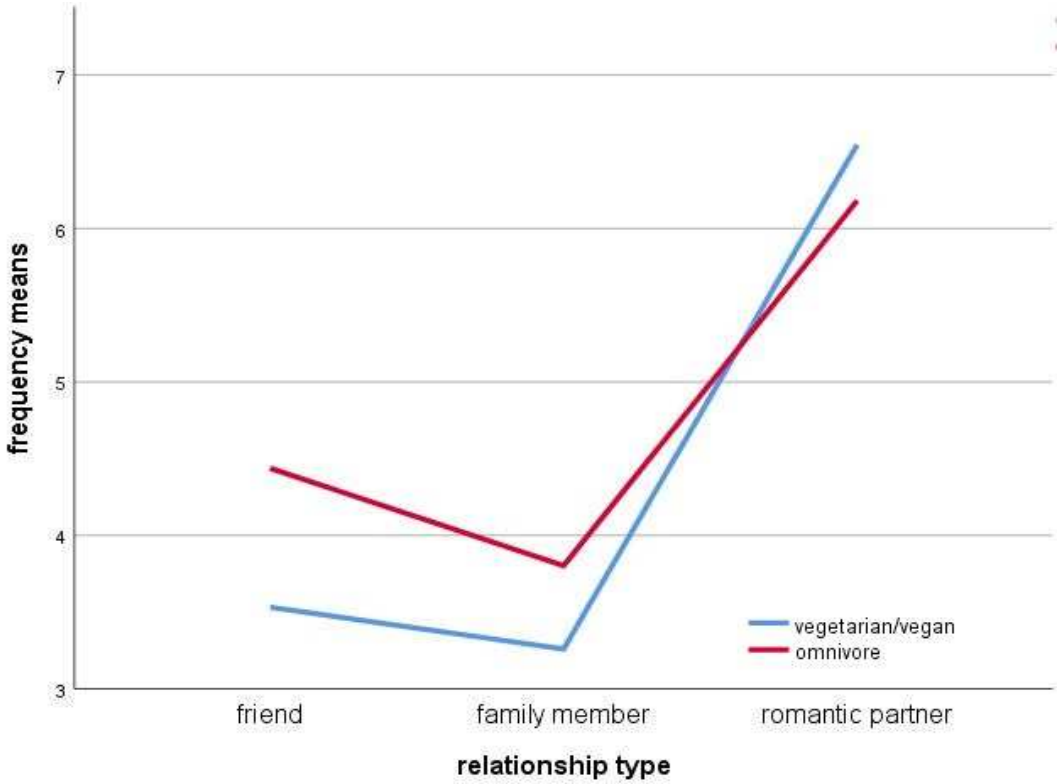

Figure 7. Mean Frequency Subscale Relationship Closeness Scores as a Function of Relationship Type and Diet Type

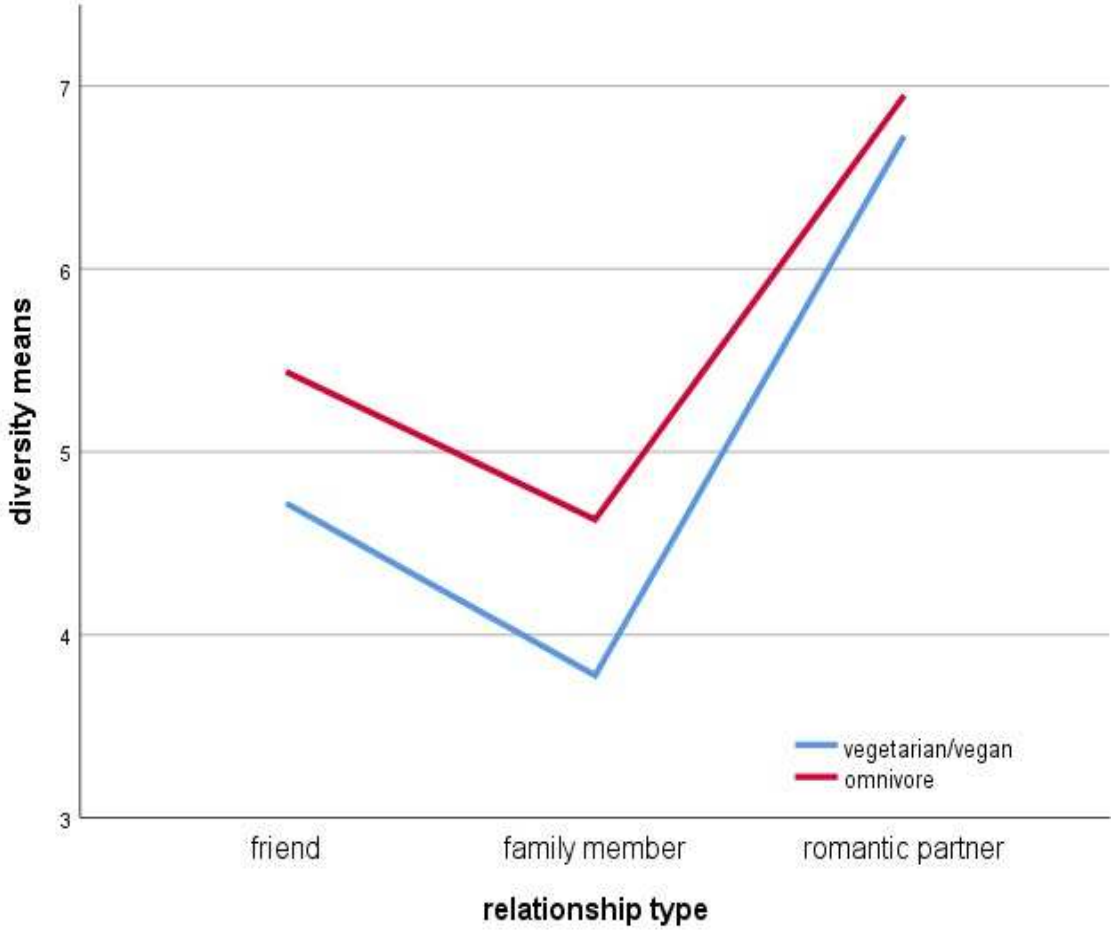

Figure 8. Mean Diversity Subscale Relationship Closeness Scores as a Function of Relationship Type and Diet Type

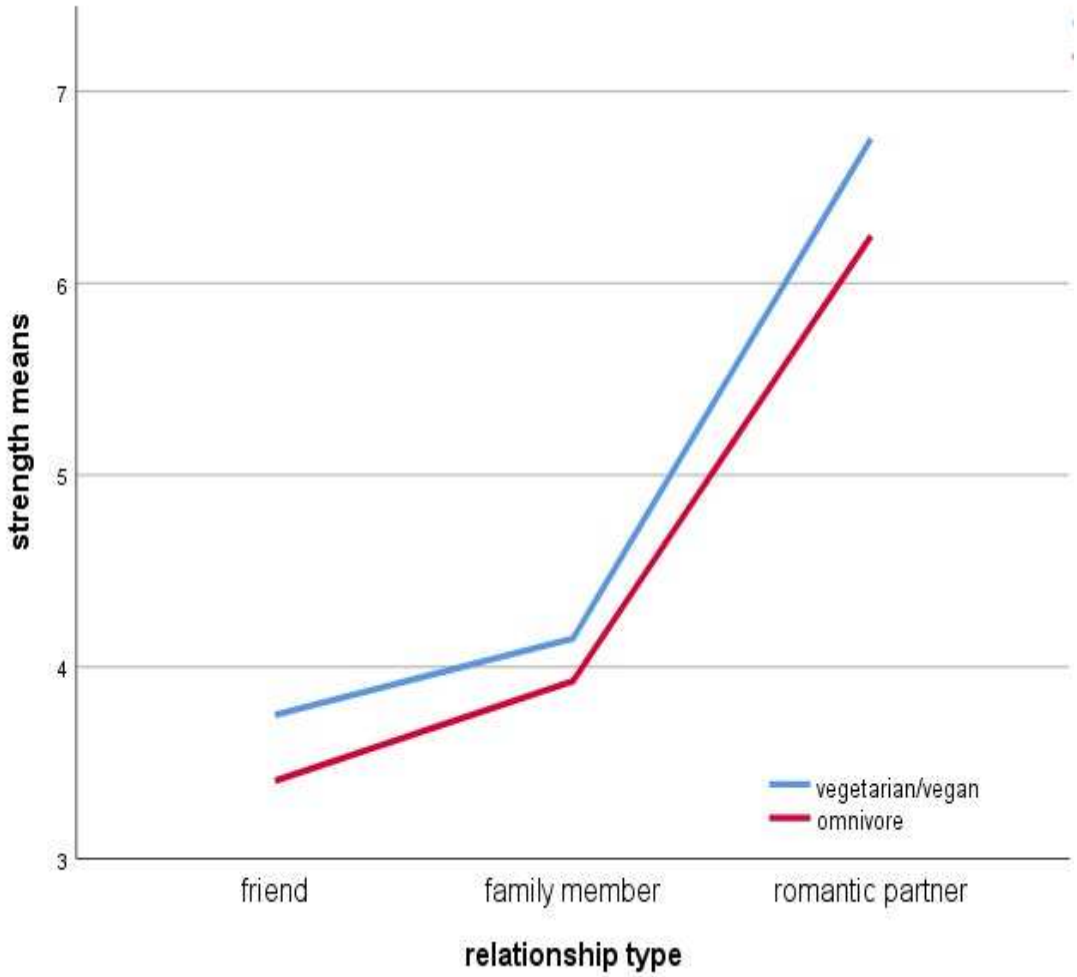

Figure 9. Mean Strength Subscale Relationship Closeness Scores as a Function of Relationship Type and Diet Type

Summary

I investigated the predictive relationship of meat-eating justification beliefs and relationship type on the closeness of relationships. The predictor variables used in the multiple linear regression were meat-eating justification beliefs (pro-meat, denial, hierarchical, dichotomization, dissociation, religious, avoidance, health, human destiny/fate) and relationship types (friend, family member, romantic partner). The criterion variables were relationship closeness and its three subscales, frequency, diversity, and strength. The denial meat-eating justification belief was a significant predictor of lower diversity scores and overall closeness

scores. The hierarchical meat-eating justification belief was a statistically significant predictor of higher diversity scores and overall closeness scores. The dissociation meat-eating justification belief was a statistically significant predictor of lower diversity scores. The relationship type of romantic partner was a statistically significant predictor of higher frequency scores, diversity scores, strength scores, and overall relationship closeness scores. The relationship type of friend was a statistically significant predictor of higher diversity scores.

I investigated relationship type and diet type on relationship closeness using a 2x3 mixed factorial MANOVA. The between-group comparisons for friend with romantic partner and for family member with romantic partner were significant for the subscales of frequency and strength. All between-group comparisons were significant for the subscale of diversity. The within-group comparisons between diet type (vegetarian, omnivore) and subscale (frequency, diversity, strength) were significant for all possible combinations. The interaction of relationship and diet type was significant for the frequency subscale. My interpretation of the findings, limitations of the study, and recommendations for future research are discussed in Chapter 5.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this quantitative study was to assess the extent to which MEJ beliefs and/or relationship type predicted relationship closeness between omnivores and their vegetarian/vegan friends, family members, and romantic partners. The study was also designed to determine if relationship type and diet type influenced the closeness of relationships between omnivores and vegetarian/vegan friends, family members, and romantic partners.

Both the dissociation and denial meat-eating justification beliefs predicted lower closeness with vegetarian/vegan friends, family members, and romantic partners on the diversity scale and lower total closeness for the denial meat-eating justification. However, the hierarchical meat-eating justification belief predicted higher closeness with vegetarian/vegan friends, family members, and romantic partners for both diversity and total closeness. The relationship of romantic partner and friend predicted closer relationships with vegetarians/vegans. Relationship closeness frequency scores and diversity scores were significantly lower when a friend or family member adopted a vegetarian/vegan diet. However, relationship closeness frequency and diversity scores were significantly higher when romantic partners adopted a vegetarian/vegan diet. Relationship closeness strength scores significantly increased when a friend, family member, or romantic partner adopted a vegetarian/vegan diet.

Interpretation of the Findings

Meat-Eating Justification Beliefs, Relationship Type, and Relationship Closeness

The denial MEJ belief (animals do not think or feel) was a significant predictor of lower relationship closeness on the diversity subscale (number of different activities participated in together) and lower total relationship closeness (frequency subscale, diversity subscale, and strength subscale combined). Individuals who scored higher on the denial meat-eating justification belief (the belief that animals lack thoughts and feelings) reported participating in significantly fewer types of activities with vegetarian/vegan friends, family members, and romantic partners than participants who did not strongly endorse that belief. The denial belief was also associated with significantly lower total relationship closeness than was seen for participants who did not strongly endorse that belief. The TBD is based in the assumption that attitude, subjective norm, and perceived behavioral control combine to create behavioral intention, which is the strongest predictor of behavior (Madden et al., 1992). Moral obligation and personal obligation may be moderators of behavioral intention (Harland et al., 1999; Stone et al., 2009). Activities that involve meat in the presence of a vegetarian/vegan may signal the relevance of a sense of moral obligation (Stone et al., 2009) or personal obligation (Harland et al., 1999) both of which could moderate behavioral intention. These obligatory feelings may be elevated in the presence of vegetarians/vegans, as even positive vegan messaging can cause negative internalized discomfort (Bresnahan et al., 2016) and the belief of moral reproach from vegetarians/vegans is even greater than actual moral reproach (Minson & Monin, 2012). It has been found that meat-consumption is related to an elevation of denial of mind and status to animals (Loughnan et al., 2010), therefore, activities that have the possibility of meat relevance may be avoided. The literature

documents a rise in denial of mind beliefs for those who consumed meat prior to being asked their views (Loughnan et al., 2010), which would suggest that the denial meat-eating justification belief is required to counter feelings that would arise from eating an animal that had the ability to think or feel. This is supported by the theoretical perspective of meat-related cognitive dissonance, which states that denial justification is a second-strategy cognitive dissonance response (Rothgerber, 2020). This strategy is enacted after the ability to simply avoid the conflicting beliefs does not work, at which time the need to deny the animal worthy of moral consideration arises (Rothgerber, 2020). The vegetarian presence would preclude avoiding the connection; therefore, activities involving meat may be avoided in relationships between omnivores who endorse the denial meat-eating justification belief and their vegetarian/vegan friends, family members, and romantic partners.

The hierarchical meat-eating justification belief (humans are superior to animals) was a significant predictor of higher relationship closeness on the diversity subscale and in total relationship closeness. A stronger endorsement of the belief that animals are here for human use predicted that they would participate in significantly more types of activities with vegetarian/vegan friends, family members, and romantic partners and the total relationship closeness was significantly higher than for those participants who did not strongly endorse that belief. The hierarchical meat-eating justification belief appears to be unique in its ability to predict significantly higher relationship closeness. The concept of perceived behavioral control within the theory of planned behavior offers some insight: The theory of planned behavior states that intention, which is the strongest predictor of behavior, can be strengthened or weakened by the perception of how much control one has over a behavior (Madden et al., 1992). Holding a belief of greater perceived behavioral control also would

lessen any beliefs of inherent risks (for example health risks) of participating in that behavior (Klein, & Helwig-Larsen, 2002). The hierarchical meat-eating justification belief holds than humans are at a higher level than animals and therefore any choice of what to do with them is completely under voluntary control of the participant. The hierarchical meat-eating justification belief would therefore align with the choice to eat or to not eat animals as a voluntary choice with no moral obligation. Hierarchical justification beliefs hold that behaviors regarding animal use are warranted as animals are irrelevant (Rothgerber, 2020). This would alleviate any contribution of moral obligation as a moderator to behavioral intention. However, moral obligation might serve as a moderator in other meat-eating justification beliefs (Stone et al., 2009). As individuals who endorse the hierarchical meat-eating justification belief would accept vegetarian/vegan choices as voluntary options, they would not be negatively affected by positive vegan messages which have been shown to elevate negative internal responses such as anger, guilt, and discomfort in omnivores (Bresnahan et al., 2016). Hierarchical attitudes persist despite presentations of negative counter beliefs (Allen, & Hung Ng, 2003). Therefore, those who endorse hierarchical meat-eating justification beliefs would be less likely to experience discomfort around vegetarians/vegans even when activities involve meat.

The dissociation meat-eating justification belief (a connection between meat consumption and animals is not allowed to be made) was a significant predictor of lower relationship closeness on the diversity subscale. Individuals who scored higher on the belief in mentally separating meat from its animal origins reported that they participated in significantly fewer types of activities with vegetarian/vegan friends, family members, and romantic partners than those participants who did not strongly endorse that belief. The

dissociation meat-eating justification belief relies heavily on countering ambivalence (simultaneously holding conflicting beliefs) and cognitive dissonance (simultaneously holding conflicting beliefs at the time those beliefs are relevant) (Berndsen & Van der Pligt, 2004; Greenwald & Ronis, 1978). In contrast to the hierarchical meat-eating justification belief, the moderator of moral obligation likely plays an important role in the diversity of activities between omnivores who endorse the dissociation meat-eating justification belief and their vegetarian/vegan friends, family members, and romantic partners. By holding beliefs against the harming of animals as unrelated to the belief of meat-eating being enjoyable, omnivores can alleviate the need to consider moral obligation when eating meat (Loughnan et al., 2010). The unified model of vegetarian identity provides dimensions of vegetarian identity. In the current study the salience (situational relevance) of vegetarian identity (Rosenfeld & Burrow, 2017) likely plays a role in activities that involve meat eating. The presence of a vegetarian/vegan during an activity involving meat-eating may render omnivore beliefs regarding liking animals and liking meat more salient at the same time (Norton, 2009; Twine, 2014). For those who endorse the dissociation meat-eating justification belief, the presence of a vegetarian/vegan while participating in activities involving meat may lessen the ability to dissociate meat from its origins. Meat-related cognitive dissonance theory places dissociation as a first strategy justification (Rothgerber, 2020); this means that the strategy is simply to hold the beliefs separate (Rothgerber, 2020). Vegetarians make carnism conspicuous and undermine strategies such as keeping beliefs regarding meat and animals separate as their presence can trigger omnivores to view themselves as meat-eaters, something that is kept from consciousness under other circumstances (Rothgerber, 2020). To alleviate the associated discomfort of cognitive

dissonance made salient by the presence of vegetarians/vegans, it would be necessary to remove oneself from the vegetarian/vegan during activities involving meat-eating (Loughnan et al., 2010) as dissociation does not actually predict significantly less consumption of any type of meat nor does it involve a change in attitude toward animals (Rothgerber, 2012).

Relationship type was also a significant predictor of relationship closeness. Romantic partner relationships predicted significantly higher relationship closeness on all three subscales (frequency, diversity, strength) and total relationship closeness. These results align with the assumption that relationships that spend the most time alone together (typically romantic relationships) are the closest (Berscheid et al., 1989; Berscheid et al, 2004, Smith, Sanford, & Whitchurch, 2009). The only variation was that in the current study friends scored significantly higher than family for diversity scores. The explanation for that variation may relate to the current study utilizing only omnivores with vegetarian/vegan relationships. As previously stated, several meat-eating justification beliefs predicted closeness for the diversity subscale. Those beliefs may have affected the relationship closeness we would have expected to see on the diversity subscale. Another possible factor is that the study only included intact relationships. Previous research has reported that friend relationships were more than twice as likely to end contact after the diet was adopted than were family relationships for both vegetarians and vegans (MacInnis & Hodson, 2015). Thus, weaker friend relationships may have dissolved when the diet change occurred leaving stronger friend relationships available to sample in the current study, whereas family relationships are less likely to be considered completely dissolved.

Diet Type, Relationship Type, and Relationship Closeness

Diet type significantly influenced relationship closeness. There were significant variations in closeness seen for all three subscales of relationship closeness (frequency, diversity, strength) between omnivore (pre-diet change) scores and vegetarian/vegan (post-diet change) scores. For frequency and diversity, the change to a vegetarian/vegan diet resulted in significantly lower closeness scores. This means that after a vegetarian/vegan diet was adopted the amount of time omnivores and vegetarians/vegans spent together and the types of activities participated in together were significantly lower than before the diet was adopted. This is consistent with vegetarians and vegans reporting negative relationship changes after adopting the new diet (Beverland et al., 2015) and often lessening of contact (MacInnis & Hodson, 2015). Past research suggests that omnivores in the presence of vegetarians/vegans, especially during times/activities involving meat consumption, often feel discomfort (Loughnan et al., 2010; Norton, 2009; Twine, 2014). These feelings may be that vegetarians are "preaching" or "judging" (Lindquist, 2013) or that they are being morally censured (Minson & Monin, 2012).

On the strength subscale, the change to a vegetarian/vegan diet resulted in significantly higher scores. This means that the level of influence that vegetarians/vegans had on omnivores' life choices was higher after the diet change than it was before the vegetarian/vegan diet was adopted. Influence was measured using the RCI strength scale which measures the totality of a person's influence on all aspects of another person's life. This appears to be a silver lining to the negative relationship experiences than vegetarians/vegans report. Despite a lessening of time spent together and fewer activities done together, the level of influence that the vegetarians/vegans have on various aspects of

the omnivores' lives is higher. This suggests that the omnivores may hold some positive feelings for the choice made by the vegetarians/vegans even if it produces discomfort and results in less time spent together and fewer activities together. This is consistent with past research which shows that while vegetarians are viewed more unfavorably than many other minority groups and receive predominantly negative media references, they are still more likely to be chosen for positions such as tenants or employees, where morality is a desired quality (MacInnis, & Hodson, 2015). This is also consistent with the findings that omnivore perception of vegan messages, i.e., preaching, judging, and moral reproach are not related to a vegetarian/vegan's actual intent, but rather is an internal reaction within the omnivore (Bresnahan et al., 2016; Lindquist, 2013; Minson & Monin, 2012).

Relationship type was also a significant predictor of relationship closeness. Romantic relationships were associated with significantly higher scores on all measures of relationship closeness. This is consistent with the expectation that romantic relationships would involve the greatest amount of time alone together (Berscheid et al., 1989). Friend relationships had significantly higher scores on diversity scale of relationship closeness. Again, this variation may in part be explained by the sampling; friend relationships that had ended were not included. Friend relationships have been shown to end at nearly twice the rate as family relationships for both vegans and vegetarians (MacInnis & Hodson, 2015). Relationships with friends or romantic partners that were unable to adapt or overcome the diet change may have ended, leaving closer relationships to sample (Morry, 2005). As family relationships tend to be lifelong, they would be more likely to remain intact with reduced closeness (MacInnis & Hodson, 2015). Repetitive use of meat-eating justification beliefs has been shown to make them stronger and more insulated against meat-related cognitive dissonance

(MRCD) (Rothgerber, 2020). Relationships where repetitive use of meat-eating justification beliefs strengthened those beliefs may have resulted in reduced MRCD. Reduced levels of MRCD may have resulted in increased diversity of interactions for friend relationships and increases in all three components of relationship closeness (frequency, diversity, strength) for romantic relationships over time.

The interaction between diet type and relationship type was significant for frequency scores. Frequency of interactions significantly decreased in friend and family relationships while they significantly increased in romantic relationships after the vegetarian/vegan diet was adopted. This may be explained in that romantic relationships are simply the closest relationships (Berscheid et al., 1989) and inherently require more negotiation and problem-solving behaviors that has been shown to result in greater closeness (Morry, 2005); less-close relationships can simply avoid interactions. The exclusion of ended relationships from this study could have favored those that were more likely to succeed. As family relationships are less likely to be considered ended, the effect of the exclusion of ended relationships would have a greater effect on friend and romantic relationships. Therefore, the results suggest that romantic relationships that remained intact after the dietary change demonstrated increases in relationship closeness (frequency of interaction).

The Theory of Planned Behavior, Moral Obligation, and Meat-Related Cognitive Dissonance

The theory of planned behavior and specifically behavioral intention provided a starting point from which the current study developed (Ajzen, 1985; Madden et al., 1992). Meat-eating justifications can arise out of attitudes toward meat eating, the societal norms held regarding meat-eating, and the perceived control one has over participating in meat-

eating (Rothgerber, 2012; 2020). The combined result of behavioral intention toward meat-eating was hypothesized to play a role whereby meat-eating justification beliefs are endorsed by omnivores. Those meat-eating justification beliefs were hypothesized to predict the closeness between omnivores and vegetarian/vegan friends, family members, and romantic partners. The denial, dissociation, and hierarchical meat-eating justifications significantly predicted relationship closeness on the diversity scale of relationship closeness. Denial and hierarchical beliefs significantly predicted total relationship closeness. Pro-meat, religious, human destiny/fate, avoidance, health, and dichotomization justifications were not significant predictors of relationship closeness.

Several moderators of behavioral intention such as moral/personal obligations, personal norms, habit, and meat-related cognitive dissonance were considered likely to play a role in perceived behavioral control and behavioral intention and thereby in the creation of meat-eating justification beliefs. The hierarchical meat-eating justification belief does not require moral obligation or even moral consideration while having a high level of perceived behavioral control (Rothgerber, 2020). The hierarchical meat-eating justification belief predicted significantly higher diversity scores and total relationship closeness scores with vegetarian/vegan friends, family members, and romantic partners.

The denial and dissociation meat-eating justification beliefs rely heavily on meat-related cognitive dissonance, reducing strategies to combat moral obligation (Rothgerber, 2020). The denial meat-eating justification predicted significantly lower diversity scores and total relationship closeness scores with vegetarian/vegan friends, family members, and romantic partners. The dissociation meat-eating justification was able to predict lower diversity scale relationship closeness with vegetarian/vegan friends, family members and

romantic partners. Meat-related cognitive dissonance theory (MRCD) would support the expectation that dissociation and denial (which are strongly associated with cognitive dissonance) would result in greater cognitive dissonance in activities involving meat-eating, whereas hierarchical justification would not result in meat-related cognitive dissonance. Dissociation and denial are meat-eating justifications that consist of strategies that tend to falter when presented with counter information, i.e., the presence of a vegetarian, resulting in cognitive dissonance (Rothgerber, 2020). In contrast, hierarchical meat-eating justification is impervious to counter information and therefore is well insulated against meat-related cognitive dissonance (Rothgerber, 2020).

Pro-meat, health, religious, and human destiny justifications may or may not involve some level of moral consideration, but ultimately the human benefit is weighed as more important. These justifications would also be guided by personal norms and habits. These four meat-eating justification beliefs rely on social acceptability and the normalization of the habit of meat eating. Therefore, when it is viewed as socially acceptable and normal to consume meat, the likelihood of experiencing internalized negativity, or MRCD, is much lower (Rothgerber, 2020). These four meat-eating justifications were not significant predictors of relationship closeness between omnivores and vegetarians/vegans. Through the lens of the theory of planned behavior**,** it may be argued that the attitude toward meat consumption combines with acceptability of the behavior (subjective norm) and the belief that the behavior is intended to be controlled by humans. Therefore, the behavioral intent to eat the meat would be unaffected by the presence of a vegetarian/vegan.

The avoidance meat-eating justification belief does not prompt any specific thought processes to counter the occurrence of MRCD but rather simply tries to avoid it. Avoidance

is a unique justification belief; not only does it not correlate with any increased animal consumption, it negatively correlates with chicken consumption and positively correlates with vegetarian meal consumption (Rothgerber, 2012). Avoidance was not a significant predictor of relationship closeness. This may be explained by the fact that those who hold this meat-eating justification already avoid meat, thereby nullifying any effect from the presence of a vegetarian/vegan. The dichotomization meat-eating justification did not predict relationship closeness. This finding may say more about the measure than the intended belief. When the MEJ was created, dichotomization was the only justification that did not correlate with the other justifications and had a low alpha on both trials (Rothgerber, 2012).

The results, taken as a whole, support that variables such as moral obligations, personal norms, habit, societal norms, and MRCD do relate to meat-eating justification beliefs. These factors ultimately were found to impact relationship closeness with vegetarian/vegan friends, family members, and romantic partners. Moral obligation and meat-related cognitive dissonance are further supported as moderators in the changes seen as a function of diet type and relationship type. This aligns with the finding that omnivores view diets chosen for moral reasons more negatively than those chosen for other reasons (MacInnis & Hodson, 2015). Relationship types that were more likely to dissipate due to a diet change (friend, romantic partner) had significantly lower negative or significantly higher positive relationship changes than did family relationships that are less likely to be considered fully dissipated. In addition, in some friend or romantic partner relationships in which meat-related cognitive dissonance was high, dissolution of the relationship may have occurred, making them unrepresented in this study while leaving healthier relationships to sample. There is also support for the salience of MRCD in that if the presence of a vegetarian during activities

involving meat-eating causes MRCD**,** we would expect to see significantly lower frequency and fewer types of activities engaged in together for relationship types (friend, family member) where it is possible to simply avoid uncomfortable activities, as was found in the current study (Rothgerber, 2020). The situational saliency of MCRD is further supported by the finding that despite lessened time and fewer activities in friend and family relationships, the strength of the relationships was higher. This aligns with MCRD in that the presence of the vegetarian/vegan when meat is salient is the trigger needing to be avoided (Rothgerber, 2020); in romantic relationships it would be much harder to avoid activities in which meat may be salient. The relationships that were included in the current study (those that remained intact) would have traversed this issue. Relationships subjected to the habitual use of meat-eating justification beliefs would result in those beliefs becoming stronger and more immune to meat-related cognitive dissonance (Rothgerber, 2020).

Limitations of the Study

The requirement that participants were still in relationships with vegans/vegetarians meant that the study did not include any relationships that may have ended due to the diet change. This may limit generalizability of findings in that it is possible that relationships that ended may have ended due to the diet change. Romantic relationships have been shown to be the closest type of relationship, but low relationship closeness scores do predict the demise of relationships (Berscheid et al., 1989; Berscheid et al., 2004; Smith et al., 2009). This may mean that the romantic relationships included in this study were the ones strong enough to adjust to a diet change; those not strong enough would not have qualified for the study. The sampling process may have limited generalizability of findings only to relationships that adjusted to the diet change for at least six months.

In the United States the breakdown for vegetarians is 68% female and 32% male (Rothgerber, 2012). The current study was even more disproportionately female for vegetarians (86% female, 14% male) than is seen for the U.S. population. Male omnivores were also underrepresented in the present sample as the omnivore participants were disproportionately female (65% female, 35% male). An important factor that stands out in the literature is that the strongest negative relationship consequences are reported by female vegetarians with male omnivore close relationships (Merriman, 2010). The underrepresentation of male omnivores in the current study did not allow for that gender difference to be fully assessed. Given that the greatest amount of negative consequences reported by vegetarians/vegans come from relationships consisting of female vegetarians/vegans and close male omnivore friends/family members it is likely that the current study underestimated the possible negative impact of diet change on relationship closeness (Merriman, 2010).

Another limitation was that the study examined relationship closeness exclusively from the viewpoint of the omnivore in the relationship. The relationship may not have been viewed the same from the perspective of the vegetarian/vegan. Vegetarian and omnivore views of each other's beliefs have been shown to be inaccurate with omnivores perceiving preaching, judgment, and moral reproach in excess of vegetarians/vegans' actual beliefs (Bresnahan et al., 2016; Lindquist, 2013; Minson, & Monin, 2012). In addition, relationship closeness is best predicted when both sides are measured (Berscheid et al., 1989). Self-report bias and social-desirability bias may have occurred in this self-report study. The respondents may have been influenced by beliefs as to how their vegetarian/vegan friend, family member, or romantic partner would view their responses. It would be expected that this issue would be

more prevalent for romantic relationships. Typically, the use of anonymous and confidential data collection, as was done in the current study, is adequate to counter this risk. In consideration of researcher bias, I took the necessary steps to ensure no aspects of data collection, analysis, or interpretation were affected by any personal views.

Recommendations

Future research regarding the effect of meat-eating justifications on relationship closeness should incorporate both individuals in the relationship; a comparison of perspectives of each party in the relationship may illustrate subtle differences in how changes in closeness are viewed. This would require a sample composed of both the omnivore and the vegetarian/vegan for each type of relationship. Ensuring that the sample has a more representative gender breakdown in relation to the actual population for both vegetarian/vegans and their omnivore counterparts would allow for greater generalizability. It would require a more time-consuming sampling process and may be better suited to an exploratory qualitative design. This method and a more comprehensive sampling procedure would also allow the possibility of including relationships that have ended. Relationships most impacted by the adoption of a vegetarian/vegan diet may have been those that have since ended; the inclusion of ended relationships would give a much better view into how relationships are impacted when someone adopts a vegetarian/vegan lifestyle and may impact which meat-eating justification beliefs are able to predict that change. It may be beneficial for future research to examine strategies used in romantic relationships and friendships that successfully navigated the transition of one member to a vegetarian/vegan diet. That is, an examination of the skills used to overcome meat-related cognitive dissonance in relationships may be the key to reducing the negative impact of diet change on relationship closeness.

Further information regarding the degree to which meat-eating justification beliefs and diet change affect relationship closeness are likely to lie both in the relationships that were and were not negatively impacted by the diet change.

Future research should also consider gender differences in meat-eating justification beliefs (Rothgerber, 2012) and in relationship consequences after diet change (Merriman, 2010). This would address the issue seen in this study where males were underrepresented in both the omnivore and the vegetarian/vegan categories. Recent literature also suggests that masculinity (Rothgerber, 2012), Machiavellian beliefs (Mertens et al., 2020) and hegemonic attitudes toward women (Allcorn, & Ogletree, 2018) may moderate the relationship between meat-eating justification beliefs and relationship closeness. A qualitative might be considered as a way to assess both sides of the relationship (omnivore, vegetarian/vegan). A qualitative study could also explore the experience of relationship closeness after a diet change from the perspectives of men and women.

Implications

The current study demonstrated that some meat-eating justification beliefs are related to relationship closeness in omnivore with vegetarian/vegan relationships. The diversity of activities and total relationship closeness are the areas that are significantly impacted. Dissociation and denial of mind justification beliefs significantly predicted lower closeness, whereas hierarchical justification beliefs significantly predicted higher closeness. The literature shows that being in the presence of a vegetarian/vegan in situations involving meat may trigger omnivore discomfort (Twine, 2014). An implication of the current study is that individuals who hold the dissociation and denial of mind justification beliefs are negatively affected by a vegan presence, whereas those who hold hierarchical justification beliefs seem

to be comfortable in the presence of a vegetarian/vegan. This further leads to the implication that moral concern moderates behavioral intention for activities related to meat-consumption. The presence of a vegetarian/vegan would make moral concern salient, resulting in meat-related cognitive dissonance during those activities, therefore those activities would be avoided.

Diet type was found to predict closeness of relationships. Adopting a vegetarian/vegan diet significantly predicted lower frequency (time spent together) and diversity (variety of activities done together) of activities but predicted higher strength scores. In romantic relationships (the closest relationships), the frequency of interactions significantly increased when a vegetarian/vegan diet was adopted, whereas frequency of interactions was significantly lower for both friends and family members (less-close relationships). The current study suggests that moral obligation moderates behavioral intention in individuals who endorse meat-eating justification beliefs that involve moral concern toward meat-eating activities. The negative changes to relationships (frequency and diversity of activities) taken with the positive impact on strength of relationships suggests that the negative effects on the relationship may be situational, possibly limited to just those activities involving meat-consumption. In the closest of relationships, romantic relationships, the implication is that the relationships that withstand the diet change manage to adapt to the change and relationship closeness increases in terms of frequency of interactions, diversity of interactions, and overall strength of influence in the relationship.

Justification beliefs omnivores use would be the same regardless of the type of relationship. Therefore, the skills used to overcome meat-related cognitive dissonance in relationships that are less able to avoid meat-related activities may be the key to reducing the

negative impact of diet change on relationship closeness. This leads to some future direction within professional practice settings that deal with relationship issues. Relationship counselors and therapists might use these results to focus on moral obligation in relation to cognitive dissonance that may arise during meat-related activities as a starting point for addressing relationship problems stemming from the change to a vegetarian/vegan diet. The current study clarified how some meat-eating justification beliefs were related to relationship closeness when a vegetarian/vegan diet was adopted, which aspects of relationship closeness were most affected, and how those effects varied for different types of relationships. There is also support for focusing on possible increases in strength of influence that vegetarians/vegans may have on omnivores after the diet change. This may be a way to focus on the positive relationship changes that might also result from diet change. Utilizing the information from the current study to reduce the negative responses vegetarians/vegans report experiencing after the diet change may help to improve relationship closeness among friends, family members, and romantic partners. Reducing the negative impact may also make it easier for individuals to make decisions related to diet changes. This information can also be used by organizations that encourage transitioning to a vegetarian/vegan diet to help individuals understand what relationship changes may occur and how to address them. Making transitioning to a vegetarian/vegan diet less negative can result in greater diet change success and healthier lifestyles. More people transitioning successfully to vegetarian/vegan diets also has potential positive societal impacts on the environment. For example, lowering meat consumption demands would lead to lower methane levels in the atmosphere (Graham & Abrahamse, 2017).

Conclusion

Many vegetarians/vegans report having experienced negative relationship consequences when they changed diets. The purpose of this study was to examine the extent to which omnivore meat-eating justification beliefs could predict those differences in relationship closeness. Surveys were completed by 190 omnivores measuring meat-eating justification endorsement, relationship demographics, relationship closeness before the diet change, and relationship closeness after the diet change. The study found that relationship closeness was significantly predicted between omnivores and vegetarian/vegan friends, family members, and romantic partners when the omnivore endorses the dissociation, denial, or hierarchical meat-eating justifications. Relationship type also predicted relationship closeness between omnivores and vegetarians/vegans. Relationships significantly changed in closeness when a vegetarian/vegan diet is adopted by one member. The type of relationship plays a role in whether the changes are positive or negative. These changes can be distressing to the parties involved. Meat-eating justification beliefs are among myriad factors that combine in complex ways, affecting relationships between omnivores and vegetarians/vegans. These justification beliefs can help us to understand which beliefs relate to lower comfort in the presence of vegetarians/vegans versus beliefs present in relationships that get closer after the diet change. Further research will be needed to fully understand the ways that variables combine; however, some therapeutic directions (e.g., addressing meat-eating cognitive dissonance related to food-centered activities and focusing on strengthened influence) are beginning to emerge as starting points for mending omnivore–vegetarian/vegan relationships.

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Appendix A: Demographics

Length of time since friend, family member or romantic partner went vegetarian:
___ years ___ months

Level of education completed:
__ Some high school
__ High school or equivalent
__ Trade school
__ Associate degree
__ Bachelor's degree
__ Master's degree
__ Professional or Doctorate degree

Appendix B: Meat-Eating Justification Scale

1. I enjoy eating meat too much to ever give it up. (PROMEAT)
2. Animals don't really suffer when being raised and killed for meat. (DENY)
3. It's acceptable to eat certain animals because they're bred for that purpose. (HIER. JUST.)
4. To me, there is a real difference between animals we keep as pets and animals we eat as Food. (DICHOT.)
5. When I look at meat, I try hard not to connect it with an animal. (DISSOC.)
6. God intended for us to eat animals. (REL. JUST.)
7. I try not to think about what goes on in slaughterhouses. (AVOID)
8. Meat is essential for strong muscles. (HEALTH JUST.)
9. It wouldn't surprise me to learn that scientists believe the human body (e.g., our teeth) has evolved to eat meat. (HD/FATE JUST.)
10. Meat tastes too good to worry about what all the critics say. (PRO-MEAT)
11. Animals do not feel pain the same way humans do. (DENY)
12. Humans are at the top of the food chain and meant to eat animals. (HIER. JUST.)
13. It seems wrong that people in some cultures eat dogs and cats. (DICHOT.)
14. I do not like to think about where the meat I eat comes from. (DISSOC.)
15. God gave us dominion over animals. (REL. JUST.)
16. I would have problems touring a slaughterhouse. (AVOID)
17. We need the protein we can only get in meat for healthy development. (HEALTH JUST.)
18. It violates human destiny and evolution to give up eating meat. (HD/FATE JUST.)
19. There is no food that satisfies me as much as a delicious piece of meat. (PRO-MEAT)
20. Meat is processed so that animal pain and discomfort is minimized and Avoided. (DENY)
21. Ultimately, animals are here to serve our needs. (HIER. JUST.)
22. I am more sensitive to the suffering of house pets like cats and dogs than other wild animals. (DICHOT.)
23. When I eat meat, I try not to think about the life of the animal I am eating. (DISSOC.)
24. It is God's will that humans eat animals. (REL. JUST.)
25. I try to stay away when people start talking to me in graphic terms about how the animals we eat suffer. (AVOID)
26. We need meat for a healthy diet. (HEALTH JUST.)
27. Our early ancestors ate meat, and we are supposed to also. (HD/FATE JUST.)

Appendix C: Relationship Closeness Inventory

We are currently investigating the nature of interpersonal relationships. As part of this study, we would like you to answer the following questions about your relationship with another person. Specifically, we would like you to choose the one person with whom you have the closest, deepest, most involved, and most intimate relationship, and answer the following questions with regard to this particular person. For some of you, this person may be a dating partner or someone with whom you have a romantic relationship. For others of you, this person may be a close, personal friend, family member, or companion. It makes no difference exactly who this person is as long as she or he is the one person with whom you have the closest, deepest, most involved, and most intimate relationship. Please select this person carefully since this decision will affect the rest of this questionnaire. With this person in mind, please respond to the following questions:

1. Who is this person? (initial of first name only) _____

What is this person's age?_____ What is your age?_____
What is this person's sex?_____ What is your sex?_____

2. Which one of the following best describes your relationship with this person? (Check only one)

WORK:
_____ co-worker _____your boss/ supervisor _____your subordinate
FAMILY:
_____aunt/uncle _____sister/brother _____ parent _____ cousin
ROMANTIC:
_____married _____engaged _____living together _____dating: date only this person
_____dating: date this person and others

FRIEND:
_____close friend (non-romantic) _____casual friend

OTHER:
_____(please specify_____)

3. How long have you known this person? Please indicate the number of years and/or months (for example, 3 years, 8 months)
_____years _____months

We would like you to estimate the amount of time you typically spend alone with this person (referred to below as "X") during the day. We would like you to make these time estimates by breaking the day into morning, afternoon, and evening, although you should interpret each of these time periods in terms of your own typical daily schedule. (For example, if you work a night shift, "morning" may actually reflect time in the afternoon, but is nevertheless time immediately after waking.) Think back over the past week and write in the average amount of time, per day, that you spent alone with X, with no one else around, during each time period. If you did not spend any time with X in some time periods, write 0 hour(s) 0 minutes.

4. DURING THE PAST WEEK, what is the average amount of time, per day, that you spent alone with X in the MORNING (e.g., between the time you wake and 12 noon)?
_____hours _____minutes

5. DURING THE PAST WEEK, what is the average amount of time, per day, that you spent alone with X in the AFTERNOON (e.g., between 12 noon and 6 pm)?
_____hours _____minutes

6. DURING THE PAST WEEK, what is the average amount of time, per day, that you spent alone with X in the EVENING (e.g., between 6 pm and bedtime)?
_____hours _____minutes

Compared with the "normal" amount of time you usually spend alone with X, how typical was the past week. (Check one)
_____ typical _____ not typical. . . if so, why? (please explain)

The following is a list of different activities that people may engage in over the course of one week. For each of the activities listed, please check all of those that you have engaged in alone with X in the past week. Check only those activities that were done alone with X and not done with X in the presence of others.

In the past week, I did the following activities alone with X: (Check all that apply)

_____did laundry
_____prepared a meal
_____watched TV
_____went to an auction/antique show

_____attended a non-class lecture or presentation
_____went to a restaurant
_____went to a grocery store
_____went for a walk/drive
_____discussed things of a personal nature
_____went to a museum/art show
_____planned a party/social event
_____attended class
_____went on a trip (e.g. vacation or weekend)
_____cleaned house/apartment
_____went to church/religious function
_____worked on homework
_____engaged in sexual relations
_____discussed things of a non-personal nature
_____went to a clothing store
_____talked on the phone
_____went to a movie
_____ate a meal
_____participated in a sporting activity
_____outdoor recreation (e.g., sailing)
_____went to a play
_____went to a bar
_____visited family
_____visited friends
_____went to a department, book, hardware store, etc.
_____played cards/board game
_____attended a sporting event
_____exercised (e.g., jogging, aerobics)
_____went on an outing (e.g., picnic, beach, zoo, winter carnival)
_____wilderness activity (e.g., hunting, hiking, fishing)
_____went to a concert
_____went dancing
_____went to a party
_____played music/sang

The following questions concern the amount of influence X has on your thoughts, feelings, and behavior. Using the 7-point scale below, please indicate the extent to which you agree or disagree by writing the appropriate number in the space corresponding to each item.

1	2	3	4	5	6	7
I strongly agree						I strongly disagree

1._____ X will influence my future financial security.
2._____X does not influence everyday things in my life.[1]
3._____X influences important things in my life.
4._____ X influences which parties and other social events I attend.
5._____ X influences the extent to which I accept responsibilities in our relationship.
6._____X does not influence how much time I spend doing household work.[1]
7._____X does not influence how I choose to spend my money.[1]
8._____X influences the way I feel about myself.
9._____X does not influence my moods.[1]
10._____X influences the basic values that I hold
11._____X does not influence the opinions that I have of other important people in my life.[1]
12._____X does not influence when I see, and the amount of time I spend with, my family.[1]
13._____X influences when I see, and the amount of time I spend with, my friends.
14._____X does not influence which of my friends I see.[1]
15._____X does not influence the type of career I have.[1]
16._____X influences or will influence how much time I devote to my career.
17._____X does not influence my chances of getting a good job in the future.[1]
18._____X influences the way I feel about the future.
19._____X does not have the capacity to influence how I act in various situations.[1]
20._____X influences and contributes to my overall happiness.
21._____X does not influence my present financial security.[1]
22._____X influences how I spend my free time.
23._____X influences when I see X and the amount of time the two of us spend together.
24._____X does not influence how I dress.[1]
25._____X influences how I decorate my home (e.g., dorm room, apartment, house).
26._____X does not influence where I live.[1]
27._____X influences what I watch on TV.

[1] reverse-scored items

Now we would like you to tell us how much X affects your future plans and goals. Using the 7-point scale below, please indicate the degree to which your future plans and goals are affected by X by writing the appropriate number in the space corresponding to each item. If an area does not apply to you (e.g., you have no plans or goals in that area), write a 1.

1 2 3 4 5 6 7
not at all a great extent

1._____my vacation plans
2._____my marriage plans
3._____my plans to have children
4._____my plans to make major investments (house, car, etc.)
5._____my plans to join a club, social organization, church, etc.
6._____my school-related plans
7._____my plans for achieving a particular financial standard of living

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Scoring Criteria for Relationship Closeness Inventory Scales

Scale Score	Frequency (No. of min)	Diversity (No. of activity domains)	Strength (strength total)
1	0-12	0	34-53
2	13-48	1	54-73
3	49-108	2-3	74-93
4	109-192	4-6	94-113
5	193-300	7-9	114-133
6	301-432	10-13	134-153
7	433-588	14-18	154-173
8	589-768	19-24	174-193
9	769-972	25-30	194-213
10	973-1200	31-38	214-238