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ARTICLE

Moral Foundations of Dietary Behavior and its Linkage to Sustainability and Feminism

Benedikt Hackert
Lilith C. Voeth
Ulrich Weger
University of Witten-Herdecke, Witten, Germany

ABSTRACT
In the current article, we explore and compare the moral-foundations-profile of vegetarians, vegans, and meat eaters and investigate how it is related to real-world behavior. Results of two surveys demonstrate a link between eating behavior, moral foundations, environmental behavior, and feminist ideals. We demonstrate that vegans place greater value on individualizing foundations (i.e., Harm and Fairness) and meat eaters on binding foundations (i.e., Authority and Loyalty), while vegetarians fall in between these poles. In addition, we observed that in other behavioral domains requiring moral assessment (e.g., sustainable behavior, fair trade shopping), people act in accordance with the moral foundations matching their dietary choice as well. We propose that the psychological basis of diet choice is embedded in the broader framework of moral foundations theory and that eating behavior is not a psychologically encapsulated domain but intertwined with other domains of moral behavior.

KEYWORDS
moral foundations theory, dietary behavior, vegans, meat eaters, sustainable behavior, ethical behavior, feminism

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Benedikt.Hackert@uni-wh.de
Lilith.Voeth@uni-wh.de
Ulrich.Weger@uni-wh.de

A moral system valid for all is basically immoral.

—Friedrich Nietzsche

Introduction

Development of Vegetarianism and Veganism

Throughout history, animals have played a significant role for human food production. With a rising population and an increasing demand for meat and other animal products, animal agriculture has changed significantly in the last decades. Nowadays, industrial livestock farming has become common practice to meet the demands that come with a rising population, that is, to produce more and cheaper meat and other animal products (Godfray et al., 2010). As a result, more than 70 billion land animals are raised, kept, and eventually killed for human food production annually (Strategic plan 2013–2017, n.d.). The conditions under which these animals have to live in confined spaces, suffering from diseases and mental distress, have raised severe animal welfare issues of public interest (Steinfeld et al., 2006). With an increasing awareness of animal suffering related to food production, diet choice is no longer merely a matter of taste, but increasingly also a question of morality. Modern factory farming is a hardly justifiable practice for a growing number of individuals from an ethical point of view. Accordingly, over the past decades, an increasing number of people have adopted a vegetarian or vegan diet and lifestyle, defined as abstaining from meat and fish, or from all animal products, respectively (Definition of veganism, n.d.; What is a vegetarian?, n.d.). These growing numbers point to the importance of investigating the exact motivations and mental processes that underlie the adoption of a vegetarian or vegan diet and, also, on the other hand, what prevents individuals from endorsing this approach.

So far, research has consistently demonstrated that ethical reasons (e.g., animal welfare, environmental concerns, world hunger) are indeed the main motivations for becoming vegetarian or vegan (Beck & Ladwig, 2021; Coelho, 2019; Fox & Ward, 2008). Of course, non-ethical motives are also existent. However, Fox and Ward (2008) found that even when people start a vegan diet with only one motive (e.g., health), they tend to adopt a wider range of motives (e.g., environmental concerns) as they continue following the diet. Hence, it is likely that even vegans or vegetarians who start their diet with non-ethical motives adopt ethical motives over time. In line with this, Janssen et al. (2016) explicitly investigated the motives for adopting a vegan diet in Germany and revealed that 89% of vegans mention animal-welfare as a motive, whereas 69% mention health as a motive, and 46% mention environmental concerns. Though Janssen et al. also found that most vegans mention at least two different motives for their diet, it still becomes clear that animal-welfare is the most prevalent motive for a plant-based diet. Of course, it has to be noted that these motives might only be true for Western nations and can differ significantly across cultures (Rosenfeld, 2018; Ruby et al., 2013). Nevertheless, it becomes evident that a large number of vegans and vegetarians reject meat consumption to prevent animal suffering and exploitation. A crucial aspect in this regard is the notion of animal sentience that stands in for the position that animals experience not only physical

states, but also emotional ones such as joy or fear (Low, 2012; Proctor et al., 2013). Research could demonstrate that "the extent to which an entity is considered to possess mental capacities, it is also considered to be morally relevant and therefore worthy of protection from harm" (Bastian & Loughnan, 2017, p. 4). As a result, when animals are considered as not being able to suffer physically or mentally, people are generally less concerned about the animal's wellbeing—which again facilitates meat consumption (Bastian & Loughnan, 2017). Both vegetarians and vegans acknowledge animals' capacity for mental suffering, but vegans go even further and reject the use of animals as resources per se (e.g., for food, clothing, etc.; see Turner, 2019). Accordingly, with the founding of The Vegan Society in 1944, veganism distanced itself from vegetarianism because a vegetarian lifestyle still tolerates a certain amount of animal cruelty for food production, which veganism objects to (Kalte, 2021). According to this position, animals deserve equal moral consideration as humans (that is, questions of life, freedom, and physical and psychological integrity). Moreover, from an animal rights movement's perspective, animals should not only be protected from suffering, but should not be used for production at all and should not be treated as property, since the concept of a natural hierarchy in which humans are superior to animals is rejected (Singer, 2015).

In general, it becomes obvious that vegetarians, vegans, and meat eaters differ significantly in their attitudes towards animals and their moral consideration. It seems plausible that these differences in attitudes also become apparent when looking at underlying moral principles in the different diet groups. These moral foundations associated with a change of diet and lifestyle will be clarified in detail in the present work with the overarching question: What are the moral foundations for ethical diet change? Or, to put it more precisely: Are there interindividual differences concerning those foundations that can explain why some perceive a vegetarian or vegan diet change as necessary, while others don't?

Eating Behavior and Moral Foundations

A general classification of moral principles that include interindividual differences between different *moral foundations* has been brought forward by moral foundations theory (Graham et al., 2011). It acknowledges that five foundations are relevant in moral judgment: Harm avoidance/Care; Fairness/Reciprocity; Loyalty/Ingroup Favoritism; Authority/Respect; and Purity/Sanctity. Harm avoidance and Fairness are also termed individualizing foundations since those emphasize individual rights, whereas Authority, Loyalty and Purity are also termed binding foundations, as those emphasize group ties. Additionally, a score of Moral Progressivism can be derived: High scores on Moral Progressivism are characterized by higher scores on Harm avoidance and Fairness and lower scores on Authority, Loyalty, and Purity, whereas low scores on Moral Progressivism are characterized by lower scores on Harm avoidance and Fairness and higher scores on Authority, Loyalty, and Purity (Yilmaz & Saribay, 2017).

When taking a closer look at carnism, vegetarianism, and veganism, it becomes clear that each of these diets involve a certain ideology with central aspects of morality

(Definition of veganism, n.d.; Weitzenfeld & Joy, 2014; What is a vegetarian?, n.d.). Even though, in everyday-life a large number of other factors (e.g., taste, social norms, etc.) determine what we actually eat as well (see Marcone et al., 2020; Renner et al., 2012; Steptoe et al., 1995; van Strien et al., 1986), the decision to adopt a vegetarian or vegan diet can involve moral evaluation. Thus, it can be assumed that different diet groups (e.g., vegetarians, vegans, meat eaters) differ from each other in the relative importance they place on different moral foundations. As stated above, a common ethical motivation for becoming vegetarian is to minimize harm to animals. Therefore, it is plausible that vegetarians place great importance on Harm avoidance when confronted with situations that call for moral assessment. In line with this, De Backer and Hudders (2015) found that the pattern of endorsement regarding different moral foundations differs between meat eaters, flexitarians— "one whose normally meatless diet occasionally includes meat or fish" (Merriam-Webster, n.d.-a), —and vegetarians in such a way that vegetarians show more endorsement for individualizing moral foundations (i.e., Harm avoidance, Fairness). Further, De Backer and Hudders (2015) also found that meat eaters place more importance on binding moral foundations (i.e., Loyalty, Authority/Respect) than vegetarians. Also, it has been suggested that omnivorous eating patterns are linked to social dominance orientation and also partly to authoritarianism (Becker, et al., 2019; Dhont et al., 2016; Dhont & Hodson, 2014; Graça et al., 2018; Hamilton, 2006; Veser et al., 2015). More specifically, social dominance orientation is associated with legitimizing meat eating via human supremacy beliefs (Becker et al., 2019), which implies an increased emphasis on the legitimacy of natural hierarchies. This also implies an affinity for Authority, which is in line with research results that show a correlation between conservative political attitudes and also traditional views (Kalof et al., 1999; Ruby, 2012) with binding moral foundations (i.e., Authority, Loyalty). Therefore, it seems likely that meat eaters also value Authority and Loyalty when assessing moral situations.

We aim to extend these findings by including a vegan sample in our analysis, since vegans' attitudes towards animal use differ in principle from those of vegetarians, as only vegans reject animal usage completely (Kalte, 2021). Also, in contrast to De Backer and Hudders (2015), we did not include a flexitarian sample because we did not aim to conduct a comprehensive replication of De Backer and Hudders (2015), but rather to extend their findings by including a vegan sample. Hence, the focus is on the vegan sample and the expected differences between the diet groups. Furthermore, the difference between flexitarians and meat eaters is a purely quantitative one, since there is no type of animal product that flexitarians generally reject but meat eaters do not. In contrast, the boundaries between meat eaters, vegetarians, and vegans are rather clear cut. Whereas vegetarians still tolerate a certain amount of animal suffering (e.g., separating cows from their calves, killing of male chicken), vegans reject any kind of animal suffering for food production. Therefore, it seems plausible that vegans place even greater importance on Harm avoidance than vegetarians. Furthermore, in contrast to vegetarianism, animal rights ideology, which demands a vegan lifestyle, rejects animal use per se and objects to human superiority. Hence, veganism can pursue an ideal of fairness

and, as a consequence, vegans should attach greater importance to Fairness when assessing moral situations compared to vegetarians. In addition, veganism opposes social dominance orientation more strongly than vegetarianism, since human superiority over animals is not supported (Ulusoy, 2015). As a result, vegans can be expected to show less binding moral foundations than vegetarians.

Eating Behavior and Consumption Behavior

In mainstream literature, veganism typically refers to abstaining from the consumption of any animal products, such as meat, dairy, eggs, and so on. Whereas this definition is sufficient for drawing a satisfying distinction between vegetarianism—defined as an abstinence from meat and fish—and veganism, it is not much more than a mere description of consumption behavior. What is not included is the philosophy and the moral conviction that precede these distinct behaviors, which is the idea of extending empathy and morality from humans to animals—a concept that is seen by philosophers as an ultimate form of social justice and the next stage in human evolution, that abandons human supremacy and aims for co-existence of humans and nature at eye level (Ulusoy, 2015). As a consequence, veganism as a cultural movement can be interpreted as an overarching ideology that does not only include a certain type of diet, but "work as a catalyst to make the connections among various stances revolving around ethics, environmental sustainability [...]", as Ulusoy states (2015, p. 419). In line with this, research has already demonstrated close associations between veganism and other movements such as environmentalism movements (Cherry, 2006). For instance, the global environmental movement *Fridays for Future*, whose goal it is to pressure policymakers into taking severe actions against the progressive global warming (Who We Are, n.d.), is also supportive of a vegan lifestyle. For *Fridays for Future* participants, following a vegan diet is considered another climate action, since the carbon footprint can be reduced significantly simply by pursuing a plant-based diet (Kokkonen, 2020). Furthermore, many vegan food or clothing companies produce organically and sustainably (for a list of such companies, see Trademarked Products—A., n.d.). Also, on the other hand, traditional organic labels in Europe cover aspects of sustainability and animal welfare (e.g., Demeter, Naturland[1]; Directorate-General for Agriculture and Rural Development, n.d.). In line with this, research has shown that vegans' aims are, in addition to advocating animal rights, also to protect the environment and to reduce world hunger (MacNair, 2001; Ulusoy, 2015).

The intertwining of both movements of veganism and environmental activism can be explained from a psychological point of view; an extension of vegan ideology into other areas of life besides eating behavior seems plausible: De Backer and Hudders' findings (2015) clearly demonstrated that endorsement patterns regarding moral foundations differ between vegetarians and meat eaters—hence it can be assumed that those differing attitudes can also come to the surface in situations other than eating behavior; to be more specific, it can be expected that vegans, vegetarians and meat eaters exhibit distinct behaviors in situations that involve moral assessments and ensuing forms of behavior or decision making. Specifically, assuming that vegans,

[1] https://www.gemuesekiste.com

vegetarians and meat eaters have different psychological moral foundations (e.g., Harm avoidance, Fairness) underlying their diet choice, it is plausible that they also morally evaluate other behaviors for which the respective moral foundations play a role, differently. For instance, such behavioral domains are concerned with climate change, exploitation of the earth's natural resources, and social justice in general (see, for example, Jackson et al., 2021; Jansson & Dorrepaal, 2015; Koszałkowska & Wróbel, 2019). Prominent examples of associated situations that call for moral behavior can be considered, for instance, the amount of consumption behavior in everyday-life, sustainable shopping, social commitment, and means of transport. Based on the differences in moral foundations between the diet groups, it can be assumed that vegans, and to a lesser degree also vegetarians place more importance on sustainability and social justice due to higher importance of Harm avoidance and Fairness than meat eaters.

In the present study, we aim to determine areas of everyday life and consumption (apart from animal products) in which the differing endorsement patterns of moral foundations regarding the three diet groups might show an impact. In other words, we aim at creating a more comprehensive picture of what other everyday behaviors are implied by the endorsement of different moral foundations and how they are linked to vegan, vegetarian, and omnivorous eating behavior.

Eating Behavior and Feminism

As hypothesized above, meat eaters, and both vegetarians and vegans should act in accordance with their respective endorsement pattern of moral foundations in different domains. The moral foundations endorsed by vegans and vegetarians also reflect moral values that are central to feminism: pertaining to the objection to authority and the valuing of fairness, central to feminism is the analysis of subordination (of women, but also of intersecting oppressions like racism, heterosexism, or class oppression; see Allen, 2016). Pertaining to the emphasis on Harm avoidance, some feminists focused on an ethic of care and a principle of non-violence (Aristarkhova, 2012). Interestingly, a link between these two approaches (veganism and feminism) has already been worked out as part of what is called *ecofeminsism*. Ecofeminsism is the idea that discrimination against women based on their gender on the one hand, and human destruction of nature on the other are intertwined and that both forms of oppression have similar underlying mechanisms. Seeing animals as part of nature, ecofeminism is "the explication of relations of power that intersect gender and species" (Twine, 2010, p. 400). Hence, exploitation of animals is specifically addressed by vegan ecofeminists. For instance, in her book *Ecofeminist Philosophy: A Western Perspective on What It Is and Why It Matters,* Warren (2000) advocates justice and caring and criticizes (unjustified) domination (see Cuomo, 2002). We can thus say that egalitarian values like non-harming and fairness are immanent to feminist ideologies—and that the same is true for an animal rights standpoint, from which animals are seen as deserving equal moral consideration as humans when it comes to the question of life, freedom, and physical and psychological wellbeing. Thus, as a third question we wanted to know whether vegans and to a lesser degree

vegetarians also support other ideologies that have a goal of social justice (i.e., feminism) more strongly. In addition, since there is a lack of empirical research on the relationship of moral foundations of feminists vs. non-feminists, we aim to generate some insights about this matter as well.

This Study

This study consists of two surveys that were conducted consecutively. Survey 1 investigated whether vegans, vegetarians, and meat eaters show different moral-foundations-profiles (MFP), that is, specific patterns of endorsement regarding the different moral foundations. Based on previous research as cited above, we developed the following hypotheses:

H1. Vegans score highest on individualizing foundations, vegetarians score lower than vegans but higher than meat eaters on individualizing foundations, and meat eaters score lowest on individualizing foundations.

H2. Meat eaters score highest on binding foundations, vegetarians score lower than meat eaters but higher than vegans on binding foundations, and vegans score lowest on binding foundations.

In addition, we aimed to determine other areas of everyday-life and consumption (e.g., sustainable behavior, fair trade buying, donations) in which the differing MFPs of the three diet groups might show an impact. We hypothesized the following:

H3. In terms of restrictive consumption behavior, sustainable shopping, use of sustainable means of transport, and social commitment the following rank order of diet groups is expected: vegans > vegetarians > meat eaters.

Survey 2 was conducted to explore whether vegans and to a lesser degree also vegetarians support feminism as an ideology that also aims for social justice more strongly than meat eaters. We hypothesized the following:

H4. The following rank order concerning the endorsement of feminist ideals is expected: vegans > vegetarians > flexitarians > meat eaters.

Survey 1

Introduction and Methods

Survey 1 was conducted to investigate whether vegans, vegetarians, and meat eaters display a different MFP.

Participants

Participants were recruited online via different Facebook[2] groups and internet forums (e.g., groups for vegans and vegetarians, groups for students) in Germany. No paid platforms were included. Additionally, participants were recruited at the [BLINDED] and took part for course credit. In order to avoid any form of bias, participants were only given general information about the study, namely that the study was concerned with eating behavior. No incentives were offered. Following data cleansing (i.e., survey

[2] Facebook™ is a trademark of Facebook Inc., registered in the U.S. and other countries. In the Russian Federation, it is recognised as an extremist organisation and its activity is prohibited.

not completed, age under 18 years, diet group not clear), data of 511 participants could be used for analysis. Of these, 376 were female, 123 were male, and 12 did not indicate their gender. Age had a median of 29 years and a range from 18 to 82 years. There was no difference in age between the diet groups (Welch's $F = .249$, $p = .78$). 217 participants were vegan, 85 vegetarian and 183 meat eaters (the remaining 10 could not be classified). Additionally, participants' political orientation was obtained.

Materials

The survey was in German; when describing items, we gave the English translation. Individuals indicated their socio-demographic data, diet choice, consumption behaviors, their attitude towards animals, and the value placed on different moral foundations.

*Diet Choice and Motivational Basis***.** To begin with, participants indicated their diet choice as "vegetarian", "vegan", "lactose-free", "gluten-free", "omnivore", "no meat", "no fish", or "other". As a second step, the variables were recoded, in order to only include the groups vegan, vegetarian, and omnivore. To do so, all indicated diet choices that include either meat or fish, or both (i.e., gluten-free, omnivore, etc.) were aggregated as omnivore, whereas the diet choices vegan and vegetarian remained unchanged. In order to assess the actual eating behavior more directly, participants were asked to indicate their actual meat and dairy consumption frequency using an ordinal scale ranging from *never* to *daily.*

Moreover, the motivational bases for an individual's diet choice, namely "animal welfare," "environmental protection," and "health" were assessed in three respective 5-point Likert scales (1 = *not at all important*, 5 = *very important*), indicating the relative importance of each motivational base with higher scores pointing to higher importance.

Everyday Life. To get a clear, and more comprehensive picture of individuals' regular behavior in everyday-life related to environmental protection, a questionnaire to assess self-reported behavior designed explicitly for this study was included. The first part of the questionnaire was concerned with making donations, namely whether participants have donated in general ("yes", "no"), and if so, in what frequency these donations have taken place ("once", "several times", "monthly", "weekly", "daily"). The second part of the questionnaire was concerned with social commitment. The first item was binary and asked "do you show social commitment?". If so, participants indicated which kind of social commitment they showed by selecting their answer from a pre-defined list with eleven options (see next sentence; "other" was also a possible answer) and by stating their commitment in their own words. Answers from those who showed social commitment were recoded later on as either "social commitment on an ethical base" (i.e., those who indicated "environment/nature", "animal welfare", "human rights", or "integration work") or "social commitment with focus on the community" (i.e., "those who indicated "politics", "culture", "children/pedagogy", "education", "religion", "civilian service"). For those who selected "other" we categorized their open answers accordingly in a qualitative deductive way using the same categories. Unfortunately, 29 participants could not be categorized in this manner because of a technical error their open answers were not saved correctly. The third part of the questionnaire

contained five items concerning everyday consumption including items such as "I buy only as much as I need," or "I wear my clothes until they are worn out." The fourth part of the questionnaire contained five items concerned with environmental protection in everyday life, for example "I try to avoid plastic packaging," or "Consistent waste separation is part of my everyday life." Both measures were answered on a 5-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*); all items are given in Appendix A and B. Internal consistency of both the third and the fourth part were acceptable (α = .605, α = .664, respectively; Field, 2018; Wirtz, 2020). Additionally, several single items that addressed "looking for certifications when doing groceries", "frequency of wasting food", "frequency of travelling by plane", "buying clothes from big companies", "frequency of buying plastic bags", "frequency of shopping at Amazon", and "buying second hand clothing" were included. Responses for the single items were given on 5-point ordinal frequency scales (e.g., 1 = *hardly ever*, 5 = *very frequently*).

Finally, participants were also asked to indicate the means of transport they are primarily using, choosing from "car", "plane", "bus", "train", "bicycle", "walking", and "other". Their responses were recoded as a binary variable, with the options environment-friendly (i.e., "bus", "train", "bicycle", "walking") vs. environment-unfriendly (i.e., "car", "plane").

Animal Attitude Scale (AAS). Individuals' attitudes towards animals were assessed with the AAS (Herzog et al., 1991). The questionnaire includes 20 statements concerning attitudes towards animals, such as "the use of animals in rodeos and circuses is cruel," or "wild animals should not be trapped and their skins made into fur coats." Responses were given on a 5-point Likert-scale (1 = *strongly disagree*, 5 = *strongly agree*). High scores indicate pro-animal welfare attitudes. Cronbach's α = .930 in our sample.

Moral Foundations Questionnaire (MFQ). Moral foundations were assessed with the MFQ-30 (Graham et al., 2011), which can be subdivided into five dimensions. The subscale Harm is concerned with avoiding and relieving suffering and is associated with compassion; the subscale Fairness refers to motives of justice and reciprocity (these two foundations being individualizing foundations); Loyalty builds on the protection that is possible in larger social groups, Authority stresses the recognition and respect for status (these being binding foundations), and Purity (which is of no relevance for our study). Out of these subscales, a score of Moral Progressivism (Clark et al., 2017) can be computed out of Harm, Fairness, Authority, and Loyalty (high scores on Harm and Fairness and low scores on Authority and Loyalty result in higher scores of Moral Progressivism). In the first part of the questionnaire, the respondents have to rate how important several statements associated with the different moral foundations are for the decision whether something is wrong or right (e.g., whether or not someone suffered emotionally). In the second part, respondents have to indicate to what extent they agree with different moral judgements (e.g., compassion for those who are suffering as a crucial virtue). Responses are given on a Likert scale (1 = *strongly disagree*, 6 = *strongly agree*). Cronbach's α = .805 for the whole scale[3].

[3] For the German version of the questionnaire and a comprehensive list of items, see: https://moralfoundations.org/questionnaires/

Procedure

Prior to the survey, participants were informed that they could cancel the survey at any time, their anonymity was ensured, and they gave their informed consent to collecting and publishing these data. Participants filled out the questionnaire online. First, they answered items concerning demographical data. In order to reduce the risk of social desirability, participants first answered the Moral Foundations Questionnaire before giving diet information. Next, they answered the questions pertaining to everyday life and at last they filled out the Animal Attitude Scale.

Data Analysis

We performed a Welch-test for all comparisons of means (i.e., vegans vs. vegetarians vs. meat eaters) as a more suitable alternative to classic *F*-tests). In our data, neither homoskedasticity, nor normal distribution was given for all cases, and the negative effects of which increase when group sizes are unequal—as it is in our sample. Therefore, it is recommended to use the Welch-test, as it has only few disadvantages compared to the standard ANOVA, but can control for the error rates much better (Delacre et al., 2019). For cases in which homoskedasticity was given, we used Hochberg's GT2 as a correction for post-hoc tests as sample sizes were markedly different. For cases in which heteroscedasticity was given, we used Games-Howell for correction (Field, 2018).

We performed Pearson correlations for all correlations involving metric or Likert-type variables. This was warranted, since Likert-type data can be regarded as continuous, graphical inspection with scatterplots indicated a linear relationship between the variables, normality was given based on the central limit theorem, and outliers are theoretically not present in Likert-type data. For correlations involving ordinal variables we performed Spearman rank correlations as they require a non-parametric testing. For all correlations, we performed Bonferroni corrections of the *p*-values to minimize the chance of Type 1 error. The *p*-values presented in the next section are the corrected values. To test for relationships between categorical variables we computed Chi square statistics. For significant Chi-Square tests, we identified which cells contribute to the relationship between the variables using a post hoc procedure based on standard residuals and Bonferroni corrections (Beasley & Schumacker, 1995; García-Pérez & Núñez-Antón, 2003).

Results and Discussion

Moral Foundations Questionnaire and Eating Behavior. Means on all MFQ variables (Harm, Fairness, Loyalty, Authority, and Moral Progressivism) differed for vegans, vegetarians and meat eaters based on self-categorization (i.e., actual eating behavior; Welch's $F(2, 240.54) = 20.97$, Welch's $F(2, 237.00) = 9.26$, Welch's $F(2, 237.25) = 9.17$, Welch's $F(2, 238.97) = 27.72$, Welch's $F(2, 230.13) = 40.68$, all $p < 0.01$). Post-hoc testing revealed the following pattern. Vegans (M = 5.16) and vegetarians (M = 5.12) rate Harm as more important than meat eaters (M = 4.68; both $p < .001$). Vegans (M = 5.00) and vegetarians (M = 5.02) rate Fairness as more important than meat eaters (M = 4.73; $p < .001$ and $p = .003$, respectively). Meat eaters (M = 3.58) and

vegetarians (M = 3.50) rate Loyalty as more important than vegans (M = 3.28, $p < .001$ and $p = .048$, respectively). Meat eaters (M = 3.57) rate Authority as more important than vegans (M = 2.92) and vegetarians (M = 3.18, $p < .001$ and $p = .002$, respectively). In general, vegans (M = 2.07) show higher Moral Progressivism than vegetarians (M = 1.77; $p = .023$) and meat eaters (M = 1.27; $p < .001$). Vegetarians score higher than meat eaters ($p < .001$).

Small positive correlations between meat consumption and MFQ were found for the subscales Authority ($r_s = .32$, $p < .001$) and Loyalty ($r_s = .17$, $p < .001$). Small negative correlations between meat consumption and MFQ were found for Harm ($r_s = –.36$, $p < .001$), Fairness ($r_s = –.19$, $p < .001$), and for Moral Progressivism ($r_s = –.40$, $p < .001$). There were small positive correlations between dairy consumption and MFQ found for Loyalty ($r_s = .17$, $p < .001$), and Authority ($r_s = .27$, $p < .001$). Negative small correlations between dairy consumption and MFQ existed for Harm ($r_s = –.24$, $p < .001$), Fairness ($r_s = –.15$, $p = .002$), and for Moral Progressivism ($r_s = –.40$, $p < 001$).

*Moral Foundations Questionnaire and Attitudes Towards Animals***.** Positive small to medium correlations between AAS and MFQ existed for Harm ($r_p = .60$, $p < .001$), Fairness ($r_p = .43$, $p < .001$), and Moral Progressivism ($r_p = .53$, $p < .001$). Negative small correlations between AAS and MFQ existed for Loyalty ($r_p = –.13$, $p = .017$) and Authority ($r_p = –.33$, $p < .001$).

*MFQ and Diet Motivation***.** There were small to medium positive correlations between animal welfare as motivation for a vegetarian/vegan lifestyle and MFQ found for Harm ($r_p = .49$, $p < .001$), Fairness ($r_p = .33$, $p < .001$), and also for Moral Progressivism ($r_p = .34$, $p < .001$). No correlations existed for Loyalty ($p > .79$) and Authority ($r_p = –.12$, $p > .05$). Also, small positive correlations between environment protection as motivation for a vegetarian/vegan lifestyle and MFQ were found for Harm ($r_p = .22$, $p < .001$), Fairness ($r_p = .23$, $p < .001$), and Moral Progressivism ($r_p = .18$, $p = .005$). No correlations were found for Loyalty ($p > .97$), and Authority ($p > .19$). No correlations were found for health as motivation for a vegan/vegetarian lifestyle and Harm ($r_p = .14$, $p > .05$), Authority ($r_p = .14$, $p > .05$), Moral Progressivism ($r_p = –.12$, $p > .05$), Fairness ($p > .65$), or Loyalty ($p > .11$).

When comparing the correlation coefficients of the vegetarian sample with those of the vegan sample, it is noteworthy that, although not significantly, positive correlations between animal welfare as motivation for vegan/vegetarian lifestyle and Harm as well as Moral Progressivism tend to be stronger in the vegan sample than in the vegetarian sample. In line with this, positive correlations between animal welfare as motivation for vegan/vegetarian lifestyle and Fairness become significant for the vegan sample only.

Furthermore, the correlations between animal welfare as motivation for vegan/vegetarian lifestyle and Harm as well as Moral Progressivism were significantly stronger than the correlation between environmental protection as motivation for vegan/vegetarian lifestyle and Harm as well as Moral Progressivism ($p < .001$, $p < .05$).

Diet and Everyday Life. A Welch test revealed a significant difference between groups for everyday consumption (Welch's $F(2, 315.94) = 10.95$, $p < .001$). Post hoc tests revealed that vegans reported a more restricted consumption behavior than

meat eaters ($p < .001$). In addition, there was a small positive correlation between everyday consumption and the AAS ($r_p = .21$, $p < .001$).

Also, significant differences between groups were found for everyday environmental protection (Welch's $F(2, 229.51) = 20.62$, $p < .001$). Post hoc tests revealed that vegans as well as vegetarians reported to lay more emphasis on environmental protection in their everyday life than meat eaters ($p < .001$, $p < .001$). Also, there was a significant positive correlation between AAS and everyday environmental protection ($r_p = .44$, $p < .001$).

Kruskal-Wallis tests showed group differences for the variables clothes from big companies ($H(2) = 20.228$, $p < .001$), second-hand clothing ($H(2) = 30.525$, $p < 001$), plastic bags ($H(2) = 32.309$, $p < .001$), certifications (e.g., organic labels; ($H(2) = 48.619$, $p < .001$). In contrast, Kruskal-Wallis tests showed no group differences for frequency of traveling by plane, frequency of shopping at Amazon, and frequency of wasting food, (all $p > .05$). Bonferroni corrected pairwise comparisons showed that vegans and vegetarians buy more second-hand clothing ($p < .001$, $p = .001$) and look for certifications more often ($p < .001$) than meat eaters, and vegans buy fewer plastic bags ($p < .001$) and buy less often clothes from big companies ($p < .001$) than meat eaters. The pattern, that positive attitudes towards animals are connected to other moral domains is reflected by correlations between the AAS and the above-mentioned variables of moral behavior: there were positive small to medium correlations between the AAS and certifications ($r_s = .36$, $p < .001$), second-hand clothing ($r_s = .27$, $p < .001$), plastic bags ($r_s = .29$, $p < .001$), and frequency of shopping at Amazon ($r_s = .13$, $p = .004$). In line with this, a small negative correlation was found for clothes from big companies ($r_s = –.16$, $p < .001$). No correlations were found for frequency of traveling by plane, and frequency of wasting food, and (all $p > .05$ or $p = .05$).

There was also a significant connection found between diet and environment-friendly vs. environment-unfriendly means of transport (χ_2 (2) = 13.580, $p = 0.001$). Post hoc testing showed that vegans used more often environment-friendly means of transport than expected ($p = .020$), whereas meat eaters used less often environment-friendly means of transport than expected ($p = .047$). In addition, there was a connection found between diet and social commitment based on ethics vs. social commitment based without ethical focus (e.g., cultural work; χ_2 (2) = 12.525, $p = .002$). Post hoc testing showed that vegans did more often social commitment based on ethics than expected ($p = .018$), whereas meat eaters did less often social commitment based on ethics than expected ($p = .03$).

Also, there was a connection found between diet and donations (χ_2 (2) = 11.150, $p = .004$). Post hoc testing showed that vegans donated more often than expected ($p = .0245$). However, when comparing only those participants that made donations, no connection between diet group and frequency of donations were found ($p > .05$).

As shown in Tables 1 and 2, vegans value individualizing moral foundations (Harm avoidance, Fairness) more strongly than meat eaters, which, in turn, place greater importance on binding moral foundations (Authority, Loyalty) than vegans, with vegetarians roughly falling in between. Thus, the results support Hypotheses H1 and H2, pointing to a distinct MFP for each diet group. In addition, vegans show higher scores of Moral Progressivism than meat eaters, while vegetarians fall in between.

Table 1

Comparison of Diet Groups Concerning Their Moral Foundations

Dependent variable	Comparison between diet groups
Harm	M_{meat} = 4.68; $M_{vegetarian}$ = 5.12; M_{vegan} = 5.16 meat vs. vegetarian: $p < .001$ meat vs. vegan: $p < .001$
Fairness	M_{meat} = 4.73; $M_{vegetarian}$ = 5.02; M_{vegan} = 5.00 meat vs. vegetarian: $p = .003$ meat vs. vegan: $p < .001$
Loyalty	M_{meat} = 3.58; $M_{vegetarian}$ = 3.50; M_{vegan} = 3.28 meat vs. vegetarian: $p = .048$ meat vs. vegan: $p < .001$ vegan vs. vegetarian: $p = .048$
Authority	M_{meat} = 3.57; $M_{vegetarian}$ = 3.18; M_{vegan} = 2.92 meat vs. vegetarian: $p = .002$ meat vs. vegan: $p < .001$
Moral progressivism	M_{meat} = 1.27; $M_{vegetarian}$ = 1.77; M_{vegan} = 2.07 meat vs. vegetarian: $p = .023$ meat vs. vegan: $p < .001$ vegan vs. vegetarian: $p = .023$

Note. Meat = meat eater; vegetarian = vegetarian; vegan = vegan. Only significant results were reported.

Table 2

Correlations Between MFQ Variables, Everyday Consumption, and Environmental Protection and AAS, Meat Consumption, and Dairy Consumption

	AAS	Meat consumption	Dairy consumption
Harm	$r_p = .60$ $p < .001$	$r_s = -.36$ $p < .001$	$r_s = -.24$ $p < .001$
Fairness	$r_p = .43$ $p < .001$	$r_s = -.19$ $p < .001$	$r_s = -.15$ $p = .002$
Loyalty	$r_p = -.13$ $p = .017$	$r_s = .17$ $p < .001$	$r_s = .17$ $p < .001$
Authority	$r_p = -.33$ $p < .001$	$r_s = .32$ $p < .001$	$r_s = .27$ $p < .001$
Moral progressivism	$r_p = .53$ $p < .001$	$r_s = -.40$ $p < .001$	$r_s = -.40$ $p < .001$
Everyday consumption	$r_p = .21$ $p < .001$	Not calculated	Not calculated
Environmental protection	$r_p = .44$ $p < .001$	Not calculated	Not calculated

Note. r_p = Pearson correlation, r_s = Spearman correlation.

Table 3

Comparisons of Diet Groups Concerning Different Moral Behaviors

Dependent variable	Significant post hoc comparisons
Big companies (Kruskal-Wallis)	Meat eaters > vegans ($p < .001$); no differences to vegetarians
Second-Hand clothing (Kruskal-Wallis)	Vegans and vegetarians > meat eaters ($p < .001$ and $p = .001$, respectively)
Plastic bags (Kruskal-Wallis)	Meat eaters > vegans ($p < .001$); no differences to vegetarians
Certifications (Kruskal-Wallis)	Vegans and Vegetarians > Meat Eaters (both $p < .001$)
Traveling by plane (Kruskal-Wallis)	No differences
Amazon.com (Kruskal-Wallis)	No differences
Wasting food (Kruskal-Wallis)	No differences
Donation (Chi-Square)	Vegans > expected ($p = .024$)
Social commitment based on ethics (Chi-Square)	Vegans > expected ($p = .018$) Meat eaters < expected ($p = .030$)
Environmental-friendly means of transport (Chi-Square)	Vegans > expected ($p = .020$) Meat eaters < expected ($p = .047$)

Note. Post hoc comparisons were calculated only for significant Kruskal-Wallis or significant Chi-Square tests

In addition, we found negative correlations between individualizing moral foundations (Harm Avoidance, Fairness) and meat and dairy consumption, and, in turn, positive correlations between binding moral foundations (Authority, Loyalty) and meat and dairy consumption. In line with this, we found positive correlations between individualizing moral foundations and the AAS, and negative correlations between binding moral foundations and the AAS. These results provide further support for Hypotheses H1–H2.

As evident from Table 2 and 3, concerning moral behavior in other domains, we generally found support for Hypothesis H3: Vegans reported lower consumerism and more conscious shopping than meat eaters, and vegans as well as vegetarians reported stronger environmental protection than meat eaters. Further, vegans rather reported to have made donations than meat eaters. Also, vegans reported social commitment in ethical domains more often, whereas meat eaters reported social commitment in rather traditional domains more often.

Survey 2

Introduction and Methods

Survey 2 further investigated the possible linkage between diet choice and behavior in other moral domains, that is, correlations between meat consumption and attitudes to disposables. In addition, to investigate links to other ideologies advocating social justice, we also examined correlations between diet choice and attitudes towards feminist ideals. The survey was in German; when describing items, we give the English translation.

Participants

Participants were recruited online via internet forums (e.g., for students, for feminists) in Germany. Additionally, participants were recruited at the university [BLINDED] and took part for course credit. As the Feminist Identity Composite (FIC, see below) was designed for women, only female participants were included in Survey 2. Data of 159 women were analyzed. Age had a median of 24 years and a range from 18 to 69 years. There was no difference in age between the diet groups (Welch's $F = .604$, $p = .54$). 12 participants were vegan, 39 participants were vegetarian, 46 flexitarian, and 57 omnivorous (5 of the remaining could not be classified). In order to avoid any form of bias, the participants were only given general information about the study, namely that it is concerned with women, animals, and personality traits. No incentives were offered.

Materials. Waste Disposal Behavior

Individual's Waste Disposal Behavior was assessed with a 24-item questionnaire (Mielke, 1985) that covers attitudes towards waste disposal behavior in different areas of life, such as packaging, buying bottles and cans, detergents and cleaners, waste disposal on the way, and disposal of dangerous materials. Sample items are: "When doing groceries, people should avoid products with fancy packaging," or "When having a picnic, people should use the next waste bin for waste disposal." Responses are given on a 5-point Likert scale (1 = *completely disagree*, 5 = *completely agree*), with higher scores indicating more sustainable waste disposal behavior. The questionnaire shows good internal consistency ($\alpha = .887$).

Feminist Identity Composite. The Feminist Identity Composite is a widely used (DeBlaere et al., 2017) 33-item scale to measure 5 stages of feminist identity development as outlined by Downing and Roush (1985, as cited in Fischer et al., 2000). Passive Acceptance is marked by an acceptance of traditional gender roles. A sample item is "I think that most women will feel most fulfilled by being a wife and a mother." Revelation is a stage of questioning such gender roles and having a negative attitude towards men. A sample item is "Gradually, I am beginning to see just how sexist society really is." Embeddedness–Emanation has a focus on the felt connection women have with other women. A sample item is "I am very interested in women writers." Synthesis means women have non-traditional but flexible views of gender roles which are based on an individual assessment. A sample item is "I have incorporated what is female and feminine into my own unique personality." Active Commitment "is characterized by a deep commitment to social change and the belief that men are equal to, but not the same as, women" (Fischer et al., 2000, p. 16). A sample item is "I care very deeply about men and women having equal opportunities in all respects." Responses are given on a 5-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*). Internal consistency of the FIC is good ($\alpha = .856$) and strong convergent and discriminant validity has been demonstrated (DeBlaere et al., 2017). We translated the FIC into German using the technique of back-translation.

Self-Assessed Feminism. Additionally, we included one item to assess participants' self-perception as feminist: "To what degree do you consider yourself as feminist?" Responses were given on a 5-point Likert scale (1 = *not at all*, 5 = *very much*).

Composite Respect for Animals Scale (CRAS-S). The Composite Respect for Animals Scale (Randler et al., 2019) is a 20-item scale that covers attitudes towards animals in a broad way. It is composed of ten subscales: Use of Animals in Research, Use of Animals for Food, Farm Animal Husbandry, Animals as Companions, Animals Use for Recreation, Human as Superior, Conservation of Animals, Animal Use for Clothing, Hunting/Angling, Commitment (emotional affection), containing items such as "It is wrong to kill crocodiles to make shoes and handbags from their skin." or "I think it is perfectly acceptable for animals to be raised for human consumption." Responses are given on a 5-point Likert scale (1 = *fully agree*, 5 = *fully disagree*). Internal consistency is good (α = .825).

Procedure

Prior to the survey, participants were informed that they could cancel the survey at any time, their anonymity was ensured, and they gave their informed consent to collecting and publishing these data. Participants filled out the questionnaire online. First, they answered items concerning demographical data. The order of the different scales was as following: Saarbrückener Persönlichkeitsfragebogen [Saarbrücken personality questionnaire] (as part of another study), Waste–Disposal Behavior, Feminist Identity Composite, and Composite Respect for Animals Scale.

Data Analysis

Data analysis was done following the same steps as in the analysis of Survey 1. Due to the small sample size of vegans, we will also report marginal significant results concerning the vegan sample.

Results and Discussion

Feminism (FIC). Means on the FIC variables Active Commitment, Revelation, Embeddedness–Emanation, and Passive Acceptance differed significantly between the diet groups (Welch's $F(2, 85.945) = 9.944$, $p < .001$, Welch's $F(2, 87.394) = 3.829$, $p = .025$, Welch's $F(2, 89.312) = 6.151$, $p = .003$, Welch's $F(2, 87.944) = 3.949$, $p = .023$). No difference was found for Synthesis ($p = .183$). Post hoc tests revealed that vegetarians and vegans scored significantly higher on Active Commitment (M = 3.78, $p < .001$; M = 3.72, $p = .056$), Revelation (M = 2.48, $p = .019$; M = 2.65, $p = .054$), and Embeddedness–Emanation (M = 3.59, $p = .002$) than meat eaters (M = 3.13, M = 2.21, M = 2.91), whereas meat eaters scored significantly higher on Passive Acceptance (M = 1.99) than vegetarians and vegans (M = 1.71, p = .019; M = 1.54, $p = .003$). No differences were found for flexitarians.

There were small positive correlations found for CRAS with Active Commitment ($r_p = .35$, $p < 001$), Synthesis ($r_p = .24$, $p = .007$), Revelation ($r_p = .28$, $p = .002$), Embeddedness–Emanation ($r_p = .27$, $p = .002$). A small negative correlation existed for CRAS with Passive Acceptance ($r_p = –.17$, $p = .02$). In addition, there were also small negative correlations found between meat consumption frequency and Active Commitment ($r_s = –.36$, $p < .001$), and Embeddedness–Emanation ($r_s = –.28$, $p = .001$). A small positive correlation was found for Passive Acceptance ($r_s = .22$, $p = .02$). No correlations

were found for Synthesis (p = .29) and Revelation (p = .05). For dairy consumption frequency there were small negative correlations found with Embeddedness–Emanation (r_s = –.21, p = .04). No correlations were found for Synthesis (p = .37), Active Commitment (p = .01), Revelation (p = .05) or Passive Acceptance (p = .35).

Waste–Disposal Behavior. Waste–Disposal Behavior differed significantly between diet groups (Welch's $F(2, 91.962) = 16.981$, $p < .001$). Post hoc tests revealed that vegans (M = 4.34) and vegetarians (M = 4.26) scored higher on Waste–Disposal Behavior than meat eaters (M = 3.74, both $p < .001$). Also, flexitarians scored higher than meat eaters (p = .005).

There were small to medium negative correlations found for Waste–Disposal Behavior with meat consumption frequency (r_s = –.45, $p < .001$), as well as with dairy consumption frequency (r_s = –.20, p = .01). Additionally, a positive small to medium correlation existed for Waste-Disposal Behavior and CRAS (r_p = .48, $p < .001$).

Self-Assessed Feminism. Self-Assessed Feminism differed significantly between the diet groups (Welch's $F(2, 87.190) = 6.681$, p = .002). Post hoc tests could show that vegans (M = 7.42, p = .01) and vegetarians scored higher on self-assessed feminism (M = 6.90) than meat eaters (M = 5.16, p = .001). A small positive correlation between CRAS and self-assessed feminism (r_p = .24, p = .002) was found. Also, a small negative correlation between meat consumption frequency and self-assessed feminism (r_s = –.28, $p < .001$) existed. No correlation existed for dairy consumption frequency (p = .07).

Table 4

Comparison of Diet Groups Concerning Feminism and Waste–Disposal Behavior

Dependent variable	Comparison between diet groups
Active commitment	M_{meat} = 3.13; $M_{vegetarian}$ = 3.78; M_{vegan} = 3.72 meat vs. vegetarian: p = .019 meat vs. vegan: p = .056
Revelation	M_{meat} = 2.21; $M_{vegetarian}$ = 2.48; M_{vegan} = 2.65 meat vs. vegetarian: p = .002 meat vs. vegan: p = .054
Embeddedness–Emanation	M_{meat} = 2.91; $M_{vegetarian}$ = 3.59; M_{vegan} = 2.65 meat vs. vegetarian: p = .002
Passive acceptance	M_{meat} = 1.99; $M_{vegetarian}$ = 1.71; M_{vegan} = 1.54 meat vs. vegetarian: p = .019 meat vs. vegan: p = .003
Self-Assessed feminism	M_{meat} = 5.16; $M_{vegetarian}$ = 6.90; M_{vegan} = 7.42 meat vs. vegetarian: p = .001 meat vs. vegan: p = .01
Waste–Disposal behavior	M_{meat} = 3.74 ; M_{flexi} = 4.03; $M_{vegetarian}$ = 4.26 ; M_{vegan} = 4.34 meat vs. vegetarian: $p < .001$ meat vs. vegan: $p < .001$ meat vs. flexi: p = .005 vegetarian vs. flexi: p = .009 vegan vs. flexi: p = .006

Note. meat = meat eater; flexi = flexitarian; vegetarian = vegetarian; vegan = vegan. Only significant differences were reported. Results relating to the vegan sample were also reported when marginally significant, since the sample size was small (n = 12).

Table 5

Correlations Between Fic Variables, Self-Assessed Feminism, and Waste–Disposal Behavior and Cras, Meat Consumption, Dairy Consumption

	CRAS	Meat consumption	Dairy consumption
Active commitment	$r_p = .35$ $p < .001$	$r_s = -.36$ $p < .001$	n.s.
Synthesis	$r_p = .24$ $p = .007$	*n.s.*	n.s.
Revelation	$r_p = .28$ $p = .002$	*n.s.*	n.s.
Embeddedness–Emanation	$r_p = .27$ $p = .002$	$r_s = -.28$ $p = .001$	$r_s = -.21$ $p = .04$
Passive acceptance	$r_p = -.17$ $p = .02$	$r_s = .22$ $p = .02$	n.s.
Self-Assessed feminism	$r_p = .24$ $p = .002$	$r_s = -.28$ $p < .001$	*n.s.*
Waste–Disposal behavior	$r_p = .48$ $p < .001$	$r_s = -.45$ $p < .001$	$r_s = -.20$ $p = .01$

Note. r_p = Pearson correlation, r_s = Spearman correlation.

As evident from Table 4 and 5, vegans and vegetarians score higher than meat eaters on FIC subscales that indicate rather feminist ideals (i.e., Active Commitment, Revelation, Embeddedness–Emanation), whereas meat eaters score higher on the subscale that indicates acceptance of traditional gender roles (i.e., Passive Acceptance). Further, vegetarians exhibit higher scores of self-assessed feminism than meat eaters. Correlations between FIC subscales and meat and dairy consumption showed the same pattern. In general, these results support Hypothesis H4, indicating that a distinct MFP can become evident in several conceptually similar ideologies.

Also, vegetarians exhibited a more sustainability-oriented attitude towards waste disposal compared to meat eaters, with flexitarians falling in between. This pattern is supported by correlations between meat consumption, dairy consumption, CRAS, and waste disposal. These results provide further support for Hypothesis H3 and point to the sustainability orientation of vegetarians not only on a behavioral level, but also in terms of attitudes.

General Discussion

Prior research (De Backer & Hudders, 2015) investigated the relation between eating behavior, the respective moral foundations and other morally relevant behaviors (i.e., donating) between meat eaters, flexitarians, and vegetarians. We took these initial findings as a starting point and extended the research by including a vegan sample and by covering a markedly broader range of moral behaviors (i.e., means of transport, sustainable/fair trade consumerism, social commitment, donations) in our study. In addition, we looked at the endorsement of feminist ideals to see whether those are connected to specific eating behavior (i.e., vegans and vegetarians), as both are based

on similar moral foundations. Overall, we found support for our Hypotheses H1–H2 concerning differing MFPs between the diet groups, for Hypothesis H3 concerning different diet groups showing moral behavior according to their MFP apart from diet choice, and also for Hypothesis H4 concerning vegans and vegetarians' stronger endorsement of feminist ideas.

Moral-Foundations-Profile

Survey 1 demonstrated that vegans have a MFP emphasizing individualizing foundations, and meat eaters have a MFP emphasizing binding foundations, while vegetarians fall in between. Consistently, vegans, as well as vegetarians, put more emphasis on Harm avoidance and Fairness when evaluating moral situations compared to meat eaters. Vegetarians and meat eaters value Loyalty more than vegans, and meat eaters put more emphasis on Loyalty compared to vegetarians and vegans. Hence, Hypotheses H1–H2 could be confirmed. Interestingly, such moral differentiation cannot only be detected in terms of distinct MFPs between diet groups, but even within groups of vegetarians or meat eaters, as indicated by negative correlations between meat or dairy consumption and individualizing foundations (i.e., Harm avoidance, Fairness). Our results are in line with earlier research (De Backer & Hudders, 2015), demonstrating that two moral foundations are predictive for diet choice, namely, Harm avoidance for vegetarians and Authority for meat eaters. Our study confirmed these initial findings and further found that not only Harm avoidance is connected to a vegetarian diet, but also Fairness—pointing to the great importance of individualizing foundations for vegetarians. In addition, our study included a vegan sample in the diet group comparison, yielding an even clearer tendency towards Moral Progressivism (high Moral Progressivism is indicated by a single score computed out of higher scores on Harm avoidance and Fairness and lower scores on Authority and Loyalty) as a result. Vegans differ even more than vegetarians from meat eaters in terms of their MFP, showing a strong emphasis on Harm avoidance and Fairness. Also, vegans displayed rejection of both binding foundations (i.e., Authority, Loyalty), whereas vegetarians only show an objection to authority. Hence, vegetarians' MFP, though also showing a tendency towards individualizing foundations, shows a slightly different pattern than vegans' MFP, and can be placed between meat eaters' MFP and vegans' MFP.

A theoretical explanation for the deviating MFPs of the different diet group is given by De Backer and Hudders (2015, p.73): "If the norm is to eat meat, then consciously reducing meat intake automatically implies not following the norm or not obeying general rules. This may explain the significant difference in moral attitudes between flexitarians and meat eaters." This should hold for vegans even more strongly, since their eating behavior deviates even more from meat eaters', flexitarians', and also vegetarians' eating behavior. These differences in following eating norms, or deviating from eating norms can be explained by differences in affinity towards Authority. In line with this, meat eaters follow eating norms and show support for Authority, whereas vegans deviate most from eating norms and show least support for Authority, while vegetarians fall in between. In line with this, we found that meat eaters hold views

of the political right significantly more often than vegans, which has already been demonstrated in previous research (Dhont & Hodson, 2014; Veser et al., 2015). A relevant underlying mechanism in this regard is social dominance orientation which refers in this respect to the belief that humans are superior to animals (Dhont & Hodson, 2014), which, again, is positively associated with attitudes of speciesism (i.e., discrimination based on species due to human supremacy assumption; Dhont et al., 2016; Merriam-Webster, n.d.-b). This might function as a possible explanation for the fact that meat eaters place great value on Authority—but is still to be tested empirically in future research.

Furthermore, positive correlations between the AAS and individualizing moral foundations, and negative ones with binding moral foundations emphasize the linkage between MFP and attitudes towards animals, showing that the typical vegans' MFP correlates with positive attitudes towards animals. Also, significant correlations between animal product consumption and moral foundations within the group of meat eaters or vegetarians demonstrate important intersubjective variability: The larger the consumed amount of animal products, the greater the value attached to binding foundations, and, on the other hand, the smaller the consumed amount of animal products, the greater the value attached to individualizing foundations—regardless of diet group.

Single-issue vs. General Ethical Behavior

Survey 1 showed that vegans act in line with their MFP, that is, they place more emphasis on individualizing foundations, and less on binding foundations. Accordingly, vegans hold more restrictive consumption habits than meat eaters (e.g., meaning they consume less and hereby support sustainability). Second, their everyday behaviors are more sustainable (e.g., use eco-friendly means of transport). Third, they show a more conscious shopping behavior (e.g., buy clothes less often from big companies). Fourth, vegans show social commitment more often in domains with explicit ethical focus than in traditional domains without such focus (e.g., refugee relief vs. cultural activities). Also, vegans rather reported to have made donations than meat eaters. Hence, Hypothesis H3 could be confirmed. Furthermore, positive correlations between the AAS and individualizing moral foundations, and negative ones with binding moral foundations emphasize the linkage between MFPs and attitudes towards animals, showing that the typical vegans' MFP correlates with positive attitudes towards animals. All of the measured behaviors cover significant aspects of sustainability and social justice. Since both sustainability and social justice can be brought forward by avoiding harm (to humans, animals, and the environment) and acting fair (on an individual as well as on a societal level), vegans have a MFP which is displayed also in several domains apart from diet. In line with this, vegans that indicate environmental protection as the main motivation for their diet show nearly the same MFP as those that indicate animal welfare as the main motivation, pointing to intertwined goals of vegan ideology and vegan moral foundations. In contrast, vegans that chose their diet out of health motivations show a different MFP, which emphasizes that distinct MFPs are rather linked to certain motives for a vegan diet, and not to the diet itself. Nonetheless, differences between diet groups

were not found on all measures. Vegans order as often as meat eaters from Amazon or waste food to the same degree as meat eaters (but see below). For vegetarians, only measures of environmental protection differed from those of meat eaters.

Survey 2 further supports the pattern described above. Concerning waste disposal, vegans and vegetarians indicated a more sustainability-oriented attitude than meat eaters. Persons who categorized themselves as flexitarian fell in between. In line with this, negative correlations between meat or dairy consumption and sustainability-oriented attitudes towards waste disposal were found.

It seems plausible that moral foundations serve as underlying bases for corresponding attitudes and behaviors in different behavioral domains. That is, abstract moral foundations realize specific attitudes in a way that is consistent with the respective MFP. For instance, valuing care finds an expression in concern over disadvantaged groups, animal welfare, and environmental protection. Therefore, vegans, vegetarians, and meat eaters act according to their MFP in all domains that involve moral evaluation and are of importance to their respective MFP. Our results are in line with research about climate change indicating that foundations of Harm avoidance/Care, and Authority are linked to personal climate change norms (Jansson & Dorrepaal, 2015) and with results demonstrating moral foundations to be predictive of sustainable consumption behaviors and political involvement in sustainability issues (Watkins et al., 2016). In turn, our findings point to the improbability of a single-issue focus (e.g., only being vegan but not acting sustainable), which is consistent with empirical research. Furthermore, vegans who chose that type of diet based on health or sustainability motivations are likely to incorporate compassion for animals later on, whereas those who were motivated by animal concerns will adopt health reasons later on (Fox & Ward, 2008; MacNair, 2001). Hence, it appears that motivations expand over time, and becoming vegan can serve as a starting point for further ethical commitment in associated domains. In line with this, among others, important goals of vegans are also reducing world hunger or pursuing anti-big-business concerns (Kalte, 2021; MacNair, 2001).

Moral Foundations and Their Support for Different Ideological Frameworks

As predicted, we found a correlation between veganism and vegetarianism and support for feminist ideals. Hence, Hypothesis H4 could be confirmed. This finding is likely due to the emphasis on individualizing foundations which is the core of different ideologies seeking social justice; in this case, veganism and feminism. It seems likely that moral foundations are internalized early on and that they work as a kind of guiding compass to identify with broader ideologies, but also in order to direct moral behavior in different domains. Such a correlation lends psychological support to a conceptualization that places animals in an intersectional approach next to gender (and other categories; Deckha, 2008). “[S]pecies as a locus of hierarchy resembled, in its structure and effect, other hierarchical markers of differences, such as gender […]” (Deckha, 2008, p. 250). As pointed out in the introduction, an individualizing MFP should be in accordance with individualizing foundations and a rejection of Authority, which is spelled out in the idea of equality concerning both, gender and animals.

In addition, it is plausible that vegan and vegetarian women have stronger feminist identities than meat-eating women, as meat-eating is connected with higher SDO, which, in turn, is linked to sexism (Schmitt & Wirth, 2009). Further, Adams established a theoretical link between meat and patriarchy in her book *The Sexual Politics of Meat* (2010). Unsurprisingly, and in line with former research, our sample also found fewer men to be vegan (e.g., Kerschke-Risch, 2015). It has to be noted though, that our vegan sample was quite small (though statistically sufficient) and that future research might benefit from replicating our Survey 2 study with a larger vegan sample to ensure the results.

Future Research and the Question of Cause and Effect

Can a personal MFP be altered and thereby create a change in attitudes towards animals or even diet change? Since our study is correlational in nature, questions about causality remain unanswered. Thus, causality in terms of MFP, diet choice, and associated behavior is an important research question, which has to be approached in future studies on the topic. Up to now, there is still inconclusive evidence about the causality and malleability of moral foundations (Alper & Yilmaz, 2020; Day et al., 2014; Napier & Luguri, 2013), but from our results it seems reasonable to infer that MFPs are not an all-or-nothing phenomenon. As evident from the MFQ mean scores, most people value all foundations to a certain degree. For instance, vegans also attach importance to Authority and meat eaters to Harm avoidance, but to a much lesser degree than the other diet group, respectively. Hence, pertaining to causality, future research could investigate whether making certain foundations more salient can change attitudes to animals or perceptions of different diets or dieters, which we are currently planning to do in a consecutive experiment. On the other hand, the opposite causal direction might function, too: since specific moral foundations are embedded in different eating ideologies (e.g., non-harm in veganism or hierarchy in meat eating) people should also emphasize such moral foundations even more strongly after adopting a specific diet. For instance, priming a vegan versus meat eating mindset might change situational importance of certain moral foundations. Furthermore, it might change the perception of different diet groups (e.g., stigmatization of vegans).

Also, it has to be noted that our results might only hold true for Western nations, since diet motivations appear to vary across cultures (see, for example, Rosenfeld, 2018). Thus, future research could explore cross-cultural differences in MFP for different diet groups.

Next to the question of causality, it might be fruitful to identify further behaviors that belong in the investigated cluster, in other words, which other social behaviors are linked to diet via MFPs or moral foundations in general. Most likely, behaviors that involve aspects of authority or harm should fall in this cluster. For instance, implicit behaviors concerning racism like microaggressions or performance in an implicit association task targeting marginalized populations could be of relevance but also perceptions of social dangers (see Leeuwen & Park, 2009), homophobia (see Barnett et al., 2018), and ambivalent sexism (see Vecina & Piñuela, 2017). More broadly, research could investigate whether diet groups differ in terms of obedience

or conformity; for example, concerning vaccine use or compliance with COVID-19 measures (see Chan, 2021). Another research question could be whether diet groups differ in how they show consideration or socially exclude others (e.g., diet groups with a specified food intolerance). Next to this, behaviors of different diet groups that are not primarily related to morality could be investigated. Diverse topics such as self-control (see Mooijman et al., 2018), identity in groups, or cognitive dissonance could be worthwhile to look at. Furthermore, demonstrated differences between meat eaters and vegetarians or vegans could be related to moral foundations, for example differences in empathy (see Dawson et al., 2021; Holler et al., 2021). Apart from that, another prospect is focusing on social and moral aspects of food (production) and whether those are also related to MFPs. Of interest could be for instance anti-consumption (see Culiberg et al., 2022) or attitudes towards livestock production systems and antibiotic use therein (see Goddard et al., 2019), genetically modified organisms (see Hielscher et al., 2016), or fast food (see Martinelli, 2013).

Conclusion

To conclude, we could demonstrate differences in MFPs between meat eaters, vegetarians, and vegans. More specifically, meat eaters and vegans differ on all moral foundations and also most strongly from each other, whereas vegetarians fall somewhat in between. Concerning moral behavior apart from diet choice, the different diet groups acted in accordance with their MFP, thereby rejecting the idea that vegans are only concerned about a vegan lifestyle. More likely, a MFP serves as a basis for general ethical behavior. This idea is further supported by the empirical linkage between eating behavior and feminism, as these ideologies have similar underlying moral foundations.

Statements

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Appendix A: Everyday Consumption Scale

1. I trash food with expired best before dates (reverse coded)
2. I buy only as much as I need
3. I own only clothes I actually put on
4. I wear my clothes until they are worn out
5. I have too much clothes (reverse coded)
6. When buying clothes, I pay attention to sustainable and social responsible production.

Appendix B: Environmental Protection in Everyday Life Scale

1. I would never take the plane if my destination is accessible by train/ car even if it takes longer.
2. I would not take the care if my destination is accessible by train even of it takes longer.
3. While doing groceries I try to avoid packages.
4. I carefully pay attention to waste separation.
5. I think it is justified that you have to pay for plastic bags in the supermarket.