



# The role of social identity motivation in dietary attitudes and behaviors among vegetarians

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## ABSTRACT

People go vegetarian for a variety of reasons—most commonly motivated by concerns about animals, health, ecology, religion, or some combination of these motivations. Largely missing from existing perspectives on vegetarian motivation, however, is consideration of how construing vegetarianism as a social identity may motivate vegetarian-relevant behavior. We advance that the desire to adopt and affirm a vegetarian identity and to see this identity in a positive light may represent an overlooked, but meaningful, source of motivation for vegetarianism. In the current study ( $N = 380$ ), we tested the predictive values of animal, health, ecological, religious, and social identity motivations among vegetarians for a variety of attitudes and behaviors. Over and above other motivational factors and the centrality and salience of being a vegetarian, social identity motivation uniquely predicted several relevant outcomes, including the tendency to violate one's vegetarian diet. These findings suggest that the desire to adopt and affirm a vegetarian identity may be a unique and meaningful motivation underlying one's choice to forgo meat.

## 1. Introduction

Many people who largely avoid eating meat while occasionally including some meat in their diets nevertheless choose to self-identify as vegetarian (Dietz, Frisch, Kalof, Stern, & Guagnano, 1995; Jabs, Sobal, & Devine, 2000; Rothgerber, 2017; White, Seymour, & Frank, 1999). This phenomenon represents a contradiction at best and hypocrisy at worst, since eating meat, regardless of how little is eaten, is incongruent with vegetarianism. Some studies have begun to explain what makes some self-identified vegetarians more or less likely to eat meat (e.g., Rosenfeld, 2019a, 2019b; Rothgerber, 2014a), although research examining why individuals who do occasionally eat meat nevertheless choose to self-identify as vegetarian is sorely lacking. One possible reason for this inconsistency may be that people see value in self-identifying as vegetarian, perhaps as benefitting their self-image. We posit that over and above the common reasons people have for giving up meat, the desire to adopt and affirm a vegetarian identity uniquely influences how people think, feel, and behave with respect to their meatless diets. We tested this possibility in the current research, theorizing that identity-based motivation may propel individuals to subscribe to vegetarianism – even when their own behavior (e.g., eating meat) may contradict the very values of vegetarianism.

## 2. Motivations for going vegetarian

Vegetarianism is more than just a dietary decision to abstain from eating meat: Rather, it is a nuanced and multifaceted social identity (Rosenfeld & Burrow, 2017a). As Rosenfeld and Burrow (2017a) highlight through their Unified Model of Vegetarian Identity (UMVI), a full appreciation of what it means to be vegetarian entails considering the intertwined roles of context (e.g., historical, sociocultural), internalized factors (e.g., self-evaluation, motivation), and externalized behaviors (e.g., dietary restriction, strictness) in shaping how individuals construe meatless eating. In the present paper, we investigate dietary motivation—a construct within the UMVI that shapes how individuals construe their diets and, thus unsurprisingly, predicts many important attitudinal and behavioral outcomes among vegetarians (Hoffman, Stallings, Bessinger, & Brooks, 2013; Janssen, Busch, Rödiger, & Hamm, 2016; Rosenfeld, 2018, 2019a,b; Rothgerber, 2014a, 2014b; Ruby, 2012).

Motivation plays an important role in a person's feelings, intentions, and behavior. With respect to diet in general, differences in motivation—and, by extension, the types of goals people pursue—have downstream effects on successful adherence to one's dietary restrictions and the effectiveness of pursuing health and weight-related goals (e.g.,

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Fuglestad, Rothman, Jeffrey, & Sherwood, 2015; Teixeira, Silva, Mata, Palmeira, & Markland, 2012). With respect to vegetarianism, specifically, researchers recognize that most vegetarians are not driven by a single motivation, but rather are driven by a complex interplay of motivational factors (Beardsworth & Keil, 1991; Janssen et al., 2016; Rosenfeld & Burrow, 2017a, 2017b). The UMVI conceptualizes multiple motivations that are continuous and mutually inclusive, suggesting that vegetarians can be driven by a complex interaction of motivations, each of which may uniquely contribute to a variety of vegetarian-related attitudes and behaviors (Rosenfeld & Burrow, 2017a). According to recent comprehensive reviews (Rosenfeld, 2018; Ruby, 2012), the four most common motivations people have for going vegetarian—in descending order of prevalence—include concerns related to the well-being of animals, their own health, ecology, and religion.

Animal motivation reflects a drive to practice vegetarianism compelled by one's own sense of what is right and wrong when it comes to humans' relations with non-human animals. For example, one might believe that the slaughter of non-human animals for human consumption represents a violation of one's moral beliefs (Hussar & Harris, 2010; Ruby, 2012), especially if non-human animals are anthropomorphized or seen as sharing human-like characteristics (Bandura, 1999; Butterfield, Hill, & Lord, 2012). Alternatively, one might believe that the consumption of meat is, in and of itself, animalistic and unbecoming of humans (Horberg, Oveis, Keltner, & Cohen, 2009). Research suggests, indeed, that the greater extent to which vegetarians are motivated for animal reasons, the more they tend to restrict the range of animal products they are willing to eat (Rozin, Markwith, & Stoess, 1997). Vegetarians who are motivated to give up meat for animal-related reasons also tend to be more disgusted by meat, to adhere to their diets more strictly, and to view their diets as strongly moralized (Rosenfeld, 2019a, 2019b). Given that many moral beliefs are thought to be fairly foundational and evolutionarily driven (e.g., Graham et al., 2013), and given that associating meat with its animal origins elicits disgust (Kunst & Haugestad, 2018; Kunst & Hohle, 2016; Ruby & Heine, 2012), vegetarians motivated by animals may be likely to adopt rigid boundaries about what is and is not acceptable for consumption. Furthermore, as ethically-motivated vegetarians are particularly likely to reject other ethically-motivated vegetarians for eating meat (thus violating their moral values)—more so than health-motivated vegetarians reject their fellow health-motivated vegetarians (Rothgerber, 2014b)—animal-motivated vegetarians may be particularly offended by in-group members who transgress against vegetarian ideals.

Vegetarians motivated for health reasons engage in vegetarian eating habits in service of health-related goals such as weight loss or reducing one's risk for coronary heart disease (Fox & Ward, 2008a, 2008b; Rosenfeld, 2018). Health-driven motivations are primarily self-focused, rather than morally or prosocially focused (Fox & Ward, 2008a; Rosenfeld, 2019a, 2019b), and thus are unlikely to make one feel morally outraged about meat consumption. Health-motivated vegetarians also feel less compelled to follow their diets as strictly as other vegetarians do (Rosenfeld, 2019a, 2019b). As such, health-related motivations may be less strongly associated with evangelizing about one's vegetarianism and less strongly associated with dietary adherence.

Ecological motivations for vegetarianism are grounded in the fact that meat consumption is far more environmentally taxing and resource-intensive than vegetarianism is (Rosi et al., 2017). As such, people who are particularly altruistic or prosocial may find themselves drawn to vegetarianism with the goal of benefiting the environment and ensuring the long-term ecological sustainability of human food production. Ecologically-motivated vegetarianism may be construed less as a matter of dietary choice and, instead, more as part of a broader lifestyle of activism and effort toward improving the world (e.g., Greenebaum, 2012)—a lifestyle potentially linked to an individual's sense of purpose in life (Rosenfeld & Burrow, 2017b). Ecological motivation to eschew meat may thus be more strongly associated with

evangelizing or espousing the importance of vegetarianism to others via word-of-mouth with the goal of having a greater societal impact and fostering greater change in humans' use of resources. Furthermore, as we predicted for animal-motivated vegetarians, ecologically motivated vegetarians may be particularly offended by those who they see transgressing against vegetarian ideals, given that they moralize their diets strongly (Rosenfeld, 2019a, 2019b) and moralization of vegetarianism in turn predicts greater rejection of transgressions against vegetarianism (Rothgerber, 2014b).

Religious motivation for vegetarianism entails restricting one's dietary consumption for purposes of achieving enlightenment or self-actualization (Stiles, 1998) or simply out of deference for the rules of one's religious order. Research on religiously-motivated vegetarianism is greatly lacking in the current literature (Rosenfeld, 2018; Ruby, 2012). More broadly, though, some studies have found that religiosity in general is associated with greater support for animal rights and, by extension, finding it less acceptable to justify killing animals for human purposes (e.g., Eckberg & Blocker, 1996; Peek, Konty, & Frazier, 1997). As such, like with animal motivations, it would seem that individuals motivated to follow a vegetarian diet for religious purposes should similarly find themselves adhering to their diets strictly and condemning other vegetarians who violate their diets.

Existing research on vegetarianism has largely emphasized the roles of animal, health, and ecological motivations, while also alluding to religious motivation as an additional driver for some individuals. However, we propose that an additional source of vegetarian motivation exists – one that has been overlooked in prior research, and is not often reported explicitly by vegetarians themselves: social identity motivation. Social identity motivation is the desire to identify with a social group, in part because of that group's perceived positivity and thus its potential benefits for one's self-esteem. To be sure, many scholars have conceptualized vegetarianism itself as being a social identity (Hornsey & Jetten, 2003; Rosenfeld & Burrow, 2017a, 2018; Rothgerber, 2017), with motivation comprising a component of this identity as reflected in the UMVI. What our research adds to this perspective is the proposition that motivation not only shapes one's sense of vegetarian identity, but also can embody a desire to adopt and affirm a vegetarian identity (what we call *social identity motivation*). Distinct from the effects of animal, health, ecological, or religious motivation, there is theoretical reason to suspect that social identity motivation likely influences vegetarians' dietary attitudes and behaviors in unique ways.

Largely missing from the current academic conversation on vegetarian motivation is consideration of how social identities directly motivate behavior. Considerable work on social identity theory in other contexts suggests that people are motivated to maintain a positive and distinct sense of self, a goal they achieve through belonging to social categories (Leonardelli, Pickett, & Brewer, 2010; Tajfel & Turner, 1979). One facet of this strategic self-categorization into group identities (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) is the comparison of one's own group with members of other groups, often in ways that end up making oneself appear more desirable (Tajfel, Billig, Bundy, & Flament, 1971). In the case of vegetarianism, this might entail identifying as a vegetarian to allow one to compare oneself favorably to those who are not vegetarians. For some vegetarians—particularly those with a high sense of vegetarian identity private regard (Rosenfeld & Burrow, 2017a)—publicly labeling oneself as a vegetarian may serve to boost self-esteem.

It should be noted, however, that while vegetarianism may be construed as a more moral decision than adhering to a non-vegetarian diet, vegetarianism itself is still often stigmatized by society, which can lead vegetarians to feel threatened (Kellman, 2000; LeRette, 2014; Minson & Monin, 2012; Purdie-Vaughns, Steele, Davies, Dittmann, & Crosby, 2008). Still, people tend to have positive absolute impressions of vegetarians (Hartmann, Ruby, Schmidt, & Siegrist, 2018; Judge & Wilson, 2018). As such, it is conceivable that some vegetarians may

nevertheless be motivated to identify as vegetarians, despite the stigma sometimes associated with vegetarianism, because of the sense of group esteem it can provide them with—a phenomenon observed with respect to other stigmatized social identities (Cialdini et al., 1976). Such vegetarians may be especially likely to show ingroup favoritism toward other vegetarians (Tajfel et al., 1971) and to want to disclose their vegetarian identity to others when they believe they may benefit from doing so.

Whether or not being motivated to eschew meat for reasons of social identity should lead to stronger or weaker impetus to inerrantly adhere to a vegetarian diet is somewhat unclear. On the one hand, social identity-motivated vegetarians may be less likely to adopt a strict vegetarian diet and may be more tempted to cheat, given the extrinsic nature of their motivation. They may feel pressured to adhere to their diet when others are watching and when hypocrisy might make them look bad, but they may otherwise lack the moral conviction and disgust response that motivates other vegetarians to eschew meat stringently. On the other hand, given that vegetarians who violate their diets run the risk of being rejected from their dietary ingroup (Hornsey & Jetten, 2003; Rothgerber, 2014b), and that social identity-motivated vegetarians likely derive self-esteem from being accepted as authentic vegetarians by their ingroup, social identity motivation may propel individuals to adhere to a vegetarian diet strictly.

These five motivations, while not intended to reflect the entire range of possible motivations for vegetarianism, are all grounded in theoretical precedent and seem to represent most of the major factors driving vegetarianism. To date, however, there has been little research simultaneously and systematically assessing their relative influence on outcomes of interest—a knowledge gap our study aimed to address.

### 3. Vegetarian-related outcomes: attitudes and behavior

As Rosenfeld and Burrow (2017a) highlight, social identity theory (Tajfel & Turner, 1979) and self-categorization theory (Turner, Hogg, Oakes, Reicher, & Wetherell 1987) are critical to providing a full understanding of vegetarian identity. In short form, these theories posit that individuals group themselves with others who share attributes with them and ultimately come to view themselves as members of these distinct groups. Drawing upon these theories and the well-developed psychological literature applying them in various contexts can provide insight into a number of important outcomes for vegetarians. For example, considerable research has shown that people tend to give preferential treatment to members of their own groups and to derogate members of other groups (e.g., Tajfel et al., 1971). As such, it is worth asking whether vegetarians express ingroup bias toward other vegetarians and anticipate outgroup derogation toward vegetarians from non-vegetarians—findings that would be consistent with the conceptualization of vegetarian identity as construed by the UMVI (Rosenfeld & Burrow, 2017a). Speaking to this likelihood, people do associate many negative attributes with vegetarians (Minson & Monin, 2012) and, as a result, vegetarians do experience their identity as a stigmatized one (LeRette, 2014). Social identity theory predicts that while vegetarians may be expected to experience impaired self-esteem as a result of their belonging to a stigmatized group (Tajfel & Turner, 1979), group membership itself—even stigmatized group membership—can nevertheless provide resilience against such stigmatization and bolster self-esteem in the face of such stigmatization (Crocker & Major, 1989; Mock, Plante, Reysen, & Gerbasi, 2013).

In a related vein, it is also worth considering another phenomenon related to social identity theory: the black sheep effect. According to research on this topic, people are especially likely to harshly judge members of their ingroup who reflect negatively on the group itself (Khan & Lambert, 1998; Marques, Yzerbyt, & Leyens, 1988). In effect, if one is relying on a social identity as a source of their self-esteem, they are wary of any source of potential threat to that positive identity from within the group itself. When applied to the context of vegetarians, we

can ask how vegetarians would feel about other vegetarians who eat meat or otherwise demonstrate hypocrisy with respect to vegetarian values (Hornsey & Jetten, 2003; Rothgerber, 2014b). One can also ask whether vegetarians themselves actually adhere to strict vegetarian diets (Rosenfeld, 2019a, 2019b; Rothgerber, 2014a), given that at least some vegetarians experience temptations to eat meat (Barr & Chapman, 2002) or to lapse (Larsson, Rönnlund, Johansson, & Dahlgren, 2003). These outcomes may be driven by the extent to which individuals are motivated to practice vegetarianism out of moral convictions, health concerns, or desires to gain social acceptance and membership authenticity by other vegetarians.

Finally, one can ask about the extent to which vegetarians selectively disclose their vegetarian identity to others and openly evangelize about or discuss their vegetarianism with others. Some vegetarians, for instance, deliberately conceal their vegetarian identity at times, refraining from even mentioning that they do not eat meat (LeRette, 2014). Such identity concealment, while avoiding the immediate unpleasantness of stigmatization, is notable in its adverse long-term consequences to one's physical and mental health (Quinn & Chaudoir, 2009). Prior research has shown that self-disclosure of one's group identity is tied to the extent to which one identifies with the group itself (Mock et al., 2013), even when the group itself is highly stigmatized (Branscombe, Schmitt, & Harvey, 1999). Moreover, highly identified group members may be more likely to discuss their group membership with others and evangelize about the positive aspects of the group (Mousavi, Roper, & Keeling, 2017). As such, we imagined that social identity-motivated vegetarians—who choose vegetarianism because they presumably hold its corresponding social identity in a positive light—would demonstrate greater disclosure of their vegetarian identity to others and would engage in more evangelizing behaviors than would vegetarians motivated primarily for other reasons.

### 4. Overview of the current research

The purpose of the current research is to test whether social identity motivation offers unique value for predicting vegetarian-relevant attitudes and behaviors over and above the predictive ability of animal, health, ecological, and religious motivations. The UMVI posits that vegetarians may be motivated by an interplay of motivational factors, rather than just one single source of motivation (Rosenfeld & Burrow, 2017a). Given that social identity plays an important role in a variety of social attitudes and behaviors, including intergroup and intragroup perception, normative behavior, and identity disclosure (e.g., Tajfel & Turner, 1979; Turner et al., 1987), social identity motivation ought to play an important role in a variety of vegetarian-relevant social attitudes and behaviors.

To this end, we hypothesized that, over and above other motivational factors and the centrality and salience of being a vegetarian, social identity motivation for vegetarianism would uniquely predict variance across a variety of social-related outcomes. While we did hypothesize that other motivational factors would almost certainly offer unique predictive value for these same outcomes, we had no specific *a priori* hypotheses regarding which motivations would be most strongly associated with each outcome. Instead, we recognize the present study as exploratory in nature, given that it is one of the first to simultaneously quantitatively assess all of these motivational factors and various outcome variables within the same study.

## 5. Method

### 5.1. Participants

Participants ( $N = 380$ , 74.6% female;  $M_{\text{age}} = 35.45$ ,  $SD = 13.43$ ) were self-identified vegetarians (i.e., including vegans) recruited from various vegetarian and vegan social media pages (i.e., Facebook groups) from the end of August 2018 to the middle of October 2018.

Informed consent was obtained from participants at the start of the survey, who were informed that the study was assessing attitudes related to being a vegetarian. The only exclusion criterion was that participants had to be over the age of 18.<sup>1</sup> Due to the survey being conducted in English, participants largely came from predominantly English-speaking countries (50.8% United States, 8.6% United Kingdom, 7.9% Canada, 6.8% Other, 27.9% unknown). Participants reported being predominantly white (81.7%), non-religious ( $M_{\text{religious}} = 2.11/7.00$ ,  $SD = 1.76$ ), and politically liberal (83.4%).

## 5.2. Materials

### 5.2.1. Social identity motivation

The extent to which participants were vegetarian for social identity reasons was assessed using a 15-item scale adapted from existing research on social motivations underlying vegetarianism (Rozin et al., 1997) and from existing research on social identity theory in non-vegetarian contexts (Mock et al., 2013; Reysen, Katzarska-Miller, Nesbit, & Pierce, 2013). Two example items were “I resist (avoid) eating meat because I like being a part of a group of people who do so” and “I resist (avoid) eating meat because it helps me fit in with others.” Responses to items ranged from 1 (*strongly disagree*) to 7 (*strongly agree*). While these particular 15 items have not been formally validated as a scale, many of the items have, themselves, been validated in prior research, and the items themselves formed an internally consistent scale ( $\alpha = .89$ ).

### 5.2.2. Animal, health, ecological, and religious motivations

Participants' animal, health, ecological, and religious motivations for vegetarianism were assessed using 4 subscales within a 10-item scale adapted from existing research (Rozin et al., 1997). Animal motivation was assessed by 3 items ( $\alpha = .83$ ), with an example item being, “Eating meat violates the animal's rights.” Religious motivation was assessed by a single item that read, “Eating meat is against my religious beliefs and/or I am a member of a group or movement that rejects meat as food.” Ecological motivation was assessed by 2 items, with an example item being, “It is wasteful of resources to eat animal rather than vegetable products, especially in a world where people are starving.” Health motivation was assessed by 4 items ( $\alpha = .87$ ), with an example item being, “A diet containing meat is not as healthy as a vegetarian diet.” Responses to items ranged from 1 (*strongly disagree*) to 7 (*strongly agree*).

### 5.2.3. Ingroup bias

Participants completed two feeling thermometers to assess the degree of ingroup bias they show toward other vegetarians. The first item read, “How positively or negatively would you rate a typical vegetarian?” The second item read, “How positively or negatively would you rate a typical non-vegetarian?” Responses to each item ranged from 0 (*extremely negative*) to 100 (*extremely positive*). Ingroup bias was calculated by subtracting participants' ratings of a typical non-vegetarian (the second item) from their ratings of a typical vegetarian (the first item).

### 5.2.4. Outgroup perception

Participants completed a single-item feeling thermometer to assess the valence in which they believe their outgroup (non-vegetarians) perceives vegetarians. This item read, “From a typical non-vegetarian

<sup>1</sup> Given that we had little *a priori* reason to hypothesize differences between self-identified vegetarians, pescatarians, or vegans, we did not investigate these variables as exclusion criteria or moderators. Moreover, given that we were primarily interested in the different motivational factors and in salience and centrality of these identities specifically, we did not assess length of time of their chosen diet which, at best, may represent a proxy or predictor of these more conceptually relevant variables.

perspective, how positively or negatively do you think they would rate a typical vegetarian?” Responses ranged from 0 (*extremely negative*) to 100 (*extremely positive*).

### 5.2.5. Vegetarian-based collective self-esteem

The valence in which participants experience a sense of group-based self-esteem from their identification as a vegetarian was assessed using an 8-item scale ( $\alpha = .71$ ) adapted from existing research on collective self-esteem (Luhtanen & Crocker, 1992). An example item read, “I feel good about being a member of the vegetarian community.” Responses to items ranged from 1 (*strongly disagree*) to 7 (*strongly agree*).

### 5.2.6. Disliking hypocritical vegetarians

Participants' opposition to vegetarian ingroup disloyalty was operationalized as their dislike of a hypothetical self-proclaimed vegetarian who occasionally ate meat. Participants first read a short vignette about an individual named Matthew who claims to be a vegetarian yet still eats a little bit of meat about once every two weeks. Then, participants completed a 7-item scale ( $\alpha = .71$ ) adapted from Hornsey and Jetten (2003). Two example items read, “Finding out that Matthew eats meat makes me feel offended” and “People like Matthew give other vegetarians a bad name.” Responses to items ranged from 1 (*strongly disagree*) to 7 (*strongly agree*).

### 5.2.7. Dietary restrictiveness of vegetarianism

To assess the restrictiveness of participants' diets, we focused on six categories of animal products vegetarians often avoid, as outlined by Rosenfeld and Burrow (2017a). Participants indicated the extent to which they restrict their consumption of (1) red meat, (2) poultry, (3) fish, (4) dairy, (5) eggs, and (6) other animal products like honey and gelatin. Responses ranged from 1 (*not at all*) to 7 (*completely*). Responses to these six items were summed to form a composite measure of dietary restrictiveness ( $\alpha = .81$ ).

### 5.2.8. Cheating on vegetarian restrictions

Based on suggestions from existing research that adherence to one's dietary regimen should be assessed subjectively and on a continuous scale (Rosenfeld & Burrow, 2017a), we presented participants with a 7-item scale ( $\alpha = .88$ ) assessing the extent to which they ate foods that they restricted from their diets in various situations. Two example situations were “When you are feeling tempted” and “When you are in a social situation.” Responses ranged from 1 (*never*) to 7 (*all the time*).

### 5.2.9. Disclosure of vegetarian identity to others

We assessed participants' proclivities to disclosing their vegetarian identity to others by adapting a measure used in the context of other stigmatized minority groups (Mock et al., 2013). For each of five different groups (“Friends,” “Family,” “Co-workers/Classmates,” “People from club/groups you belong to,” and “Strangers”), participants indicated how likely they would be to tell members of this group about their vegetarian identity. Responses ranged from 1 (*would not tell*) to 7 (*would definitely tell*). These items formed an internally consistent composite measure of vegetarian identity disclosure ( $\alpha = .85$ ).

### 5.2.10. Word-of-mouth evangelizing

We asked participants whether or not they espouse their beliefs about vegetarianism to others. A 6-item measure ( $\alpha = .81$ ), adapted from existing research (Harrison-Walker, 2001), asked participants to indicate their agreement with behaviors related to word-of-mouth evangelizing about vegetarianism. An example item read, “I seldom miss an opportunity to tell others about vegetarianism.” Responses to items ranged from 1 (*strongly disagree*) to 7 (*strongly agree*).

### 5.2.11. Covariates: salience and centrality of vegetarian identity

To rule out the possibility that relationships between motivational factors and outcomes were due to covariance with the recurrent or

chronic proximity of one's vegetarian identity to one's overall self-concept, we assessed and statistically controlled for vegetarian identity salience and centrality. Vegetarian identity salience, which relates to the frequency with which an individual thinks about being a vegetarian (Rosenfeld & Burrow, 2017a), was assessed with a single-item adapted from existing research (Quinn & Chaudoir, 2009): "How often do you generally think about being a vegetarian?" Participants responded on a scale ranging from 1 (*never*) to 8 (*many times each day*). Vegetarian identity centrality, which reflects the extent to which being a vegetarian is central to an individual's overall sense of identity, was assessed by adapting measures from existing research (Hornsey & Jetten, 2003; Leach et al., 2008; Rosenfeld & Burrow, 2018). Participants indicated their agreement with a set of 6 items ( $\alpha = .84$ ). Two example items were "Being a vegetarian is an important part of how I see myself" and "I strongly identify as a vegetarian." Responses to items ranged from 1 (*strongly disagree*) to 7 (*strongly agree*).

5.3. Procedure

Participants completed survey materials in a randomized order such that both the order of items within each scale was randomized and the order in which each scale was presented was randomized by the survey website, Qualtrics. Participants completed the online survey in exchange for entry into a draw for an online gift card. All participants were treated in accordance with APA ethical standards.

Of the 380 participants who began the study, 295 completed the study to the very end, doing so in an average of approximately 22 min. Participants were informed that they could leave blank any questions they preferred not to respond. In the interest of preserving the integrity of the original dataset and minimizing researcher influence, no participants were dropped from the data analysis, nor were any imputation techniques used to fill in missing data.

6. Statistical analysis and results

All analyses were completed using IBM SPSS and AMOS v. 22. Zero-order Pearson correlations were calculated between all assessed variables using SPSS, the results of which are shown in Table 1. Descriptive statistics for these variables were also calculated using SPSS and are provided at the bottom of the table. To identify which motivations uniquely predicted which outcomes, we conducted a series of structural equation models using AMOS. We used this method due to the highly correlated nature of the predictor variables and many of the outcome

variables. In contrast to traditional regression analyses, moreover, structural equation modeling allows for multiple outcome variables to be assessed simultaneously. Structural equation modeling also allows for model simplification through the removal of nonsignificant pathways between predictor variables and specific outcome variables. The result is a parsimoniously and holistic view of the data.

The first model allowed every predictor variable and covariate to predict every outcome variable. Within this model, every predictor variable was allowed to covary with every other predictor variable, and every outcome variable error term was allowed to covary. Due to this model's just-identified nature, it fit the data perfectly, but was considerably lacking in parsimony. We iteratively simplified the model by sequentially removing all nonsignificant pathways and then running the model again until there were no more nonsignificant pathways to remove. The final result was the model shown in Fig. 1, which showed to be an excellent, parsimonious fit for the data ( $CMIN/DF = .894$ ,  $p = .683$ ;  $CFI > .999$ ;  $RMSEA < .001$ ).

Table 2 shows that each of the motivational variables offered unique predictive value for explaining variance in vegetarians' attitudes and behaviors. Being vegetarian for animal reasons predicted stronger dislike of hypocritical vegetarians and greater dietary restrictiveness. Religious motivation similarly predicted greater dietary restrictiveness. Ecological motivation predicted more negative outgroup perception, lower vegetarian esteem, and greater ingroup bias. Health motivation predicted greater ingroup bias, greater dietary restrictiveness, greater tendency to disclose one's vegetarianism to others, and greater word-of-mouth advocacy for vegetarianism. Finally, social identity motivation predicted higher vegetarian esteem, more positive outgroup perceptions of vegetarianism, greater propensity to cheat on one's vegetarian restrictions, and lower disclosure of vegetarian identity to others.

7. Discussion

The current study provides an initial empirical test of the relationships between core motivational factors underlying vegetarianism and important dietary attitudes and behaviors. As hypothesized, over and above other motivational factors and the centrality and salience of vegetarianism itself, social identity motivation for vegetarianism—that is, the desire to see oneself as vegetarian and to identify with this social category—uniquely predicted several outcomes, including vegetarian esteem, outgroup perceptions of vegetarianism, propensity to violate one's diet, and disclosure of vegetarian identity to others. Furthermore, while we had no specific *a priori* hypotheses regarding the relationships

Table 1

Means, Standard Deviations, and Zero-Order Pearson Correlations between All Assessed Variables in a Sample Recruited through Online Vegetarian and Vegan Social Media Pages (N = 380).

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Moti: Animal	1.0	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2. Moti: Religious	.37**	1.0	–	–	–	–	–	–	–	–	–	–	–	–	–
3. Moti: Ecology	.61**	.36**	1.0	–	–	–	–	–	–	–	–	–	–	–	–
4. Moti: Health	.45**	.31**	.61**	1.0	–	–	–	–	–	–	–	–	–	–	–
5. Moti: Social	.32**	.21**	.41**	.34**	1.0	–	–	–	–	–	–	–	–	–	–
6. Covar: Salient	.21**	.12*	.17**	.19**	.22**	1.0	–	–	–	–	–	–	–	–	–
7. Covar: Central	.47**	.30**	.44**	.43**	.51**	.43**	1.0	–	–	–	–	–	–	–	–
8. Ingroup Bias	.31**	.26**	.38**	.37**	.30**	.09	.41**	1.0	–	–	–	–	–	–	–
9. Outgroup Perc.	-.07	-.07	-.07	-.06	-.14**	-.02	.04	-.16**	1.0	–	–	–	–	–	–
10. Veg. Esteem	.17**	.06	.11*	.15**	.34**	.10	.39**	.14**	.32**	1.0	–	–	–	–	–
11. Dislike Hypoc.	.29**	.22**	.19**	.21**	.10	.03	.29**	.30**	-.12*	-.03	1.0	–	–	–	–
12. Restrictiveness	.46**	.39**	.43**	.45**	.28**	.20**	.42**	.31**	-.10	.13*	.30**	1.0	–	–	–
13. Cheating	-.11*	-.11*	-.07	-.03	.02	-.09	-.21**	-.06	.10	-.02	-.24**	-.22**	1.0	–	–
14. Disclosure	.14*	.12*	.15**	.28**	.11	.22**	.36**	.13*	.04	.32**	.07	.19**	-.07	1.0	–
15. Word-of-mouth	.35**	.27**	.42**	.50**	.41**	.32**	.60**	.36**	.01	.35**	.14*	.36**	-.15**	.49**	1.0
Mean	5.75	3.02	4.86	4.01	2.98	6.04	5.10	15.76	45.5	5.07	3.95	5.38	1.54	5.22	3.63
Standard Deviation	1.39	2.38	1.39	1.68	1.04	2.02	1.39	19.40	19.4	0.79	1.59	1.33	0.83	1.35	1.23

Note. \*p < .05, \*\*p < .01.

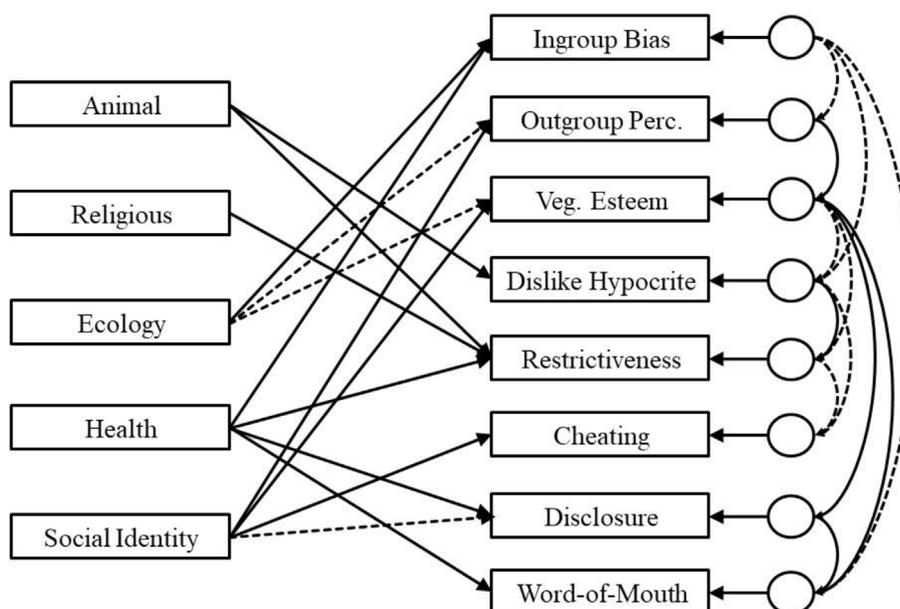


Fig. 1. Structural equation model allowing five factors motivating vegetarianism to predict outcomes. Solid arrows indicate significant positive relations. Dotted arrows indicate significant negative relations. For simplicity of presentation, covariates and covariances between all predictor variables are not shown.

Table 2

All significant standardized regression weights between motivational predictor variables and outcome variables in the trimmed SEM.

Predictor	Outcome	Regression Weight	p-Value
Animal	Dislike Hypocrite	.196	< .001
Animal	Restrictiveness	.209	< .001
Religious	Restrictiveness	.166	< .001
Ecological	Ingroup Bias	.177	.004
Ecological	Outgroup Perception	-.163	.005
Ecological	Vegetarian Esteem	-.117	.036
Health	Ingroup Bias	.129	.032
Health	Restrictiveness	.227	< .001
Health	Disclosure	.192	< .001
Health	Word-of-Mouth	.304	< .001
Social	Outgroup Perception	.223	< .001
Social	Vegetarian Esteem	.204	< .001
Social	Cheating	.159	.010
Social	Disclosure	-.176	.002

between the other four motivational factors (animal, health, ecological, and religious) with outcomes, we did observe that each factor offered unique value for predicting outcomes.

Not surprisingly, our data highlight value in assessing each of the commonly discussed animal, health, ecological, and religious motivations, as distinct from one another—a distinction that may be particularly valuable to emphasize, given that animal, ecological, and religious motivations have been grouped together into a singular “ethical motivation” category in prior research (e.g., Hoffman et al., 2013). While these four motivations were correlated with one another, in line with existing research suggesting that most vegetarians were multiply motivated (Janssen et al., 2016), it was also the case that each motivation predicted distinct outcomes. For example, although both may be conceived as types of “personal motivation” (Rosenfeld & Burrow, 2017a), religious and health motivations were not homogenous: Whereas both motivations predicted greater dietary restrictiveness, health motivation—but not religious motivation—also predicted ingroup bias, disclosure, and word-of-mouth evangelizing. Thus, the present findings

illustrate promising future directions for assessing different motivational factors in tandem to determine unique relationships between each motivation and outcomes.

We also observed relationships that provide meaningful insights into social identity phenomena related to vegetarianism. Ecological motivation predicted greater ingroup bias yet also predicted more negative outgroup perceptions and lower vegetarian esteem. As vegetarians comprise a stigmatized group (Minson & Monin, 2012), it may be the case that ecologically motivated vegetarians see themselves as a sort of embattled minority, fighting righteously to improve our ecological system. Processes related to upward moral comparison, whereby non-vegetarians feel morally threatened or judged by ecologically motivated vegetarians, may lead omnivores to further derogate ecologically motivated vegetarians (Minson & Monin, 2012). Indeed, omnivores hold more negative attitudes toward ecologically motivated vegetarians than toward health-motivated vegetarians (MacInnis & Hodson, 2017). Ecologically motivated vegetarians may become aware of these unfavorable attitudes toward them and internalize these attitudes as negative aspects of the self. This process may explain why ecological motivation predicted more negative outgroup perceptions but leaves ecological motivation's link with lower vegetarian esteem more open. We imagine vegetarians who eschew meat to help the environment derive positive moral self-worth from their altruistic act, yet any potential gain to self-esteem from this may be overshadowed by the unfavorable consequences of inducing upward moral comparison in omnivores. An additional reason why high ecological motivation predicted lower vegetarian esteem may be that vegetarians who eschew meat solely for ecological reasons may lack the endorsement of animal rights beliefs that are often seen as essential for being a “true” vegetarian (Greenebaum, 2012). Thus, ecological motivation, in the absence of animal-related motivation, may not suffice to secure a vegetarian ingroup acceptance. This speculation, however, requires empirical testing.

Two surprising findings were that health motivation predicted greater disclosure and greater word-of-mouth evangelizing. First, greater disclosure related to health motivation may reflect a drive among some vegetarians to publicly reject possessing moral motivations, in aims of avoiding the troubling nature of upward moral comparison. Evidence does highlight that some vegetarians deliberately emphasize that their diets are health-driven, rather than grounded in

their moral beliefs, when discussing their vegetarianism with others (Rosenfeld, *in press*; Wilson, Weatherall, & Butler, 2004). Second, it would seem, at first glance, that a person restricting their diet due to health or physical concerns would feel little reason to evangelize their decision to do so to others, as their sense of dietary motivation is self-focused. The present findings suggest, however, a link between health motivation and evangelizing. To this, we speculate that vegetarians motivated by health reasons may seek to motivate others around them to similarly adopt vegetarianism as a health or weight-loss strategy. In this sense, health-motivated vegetarians may construe their diets as not only personally, but also prosocially, oriented (Rosenfeld & Burrow, 2017b). This altruistic, purpose-driven aim may spur health-motivated vegetarians to disseminate nutritional information about vegetarianism throughout their social networks.

Extending beyond commonly discussed animal, health, ecological, and religious motivations, our study suggests that future research can benefit from considering social identity motivation as an additional motivation that individuals have for following meatless diets. Of the five motivations assessed, social identity motivation tied with health motivation in uniquely predicting four outcomes. A limitation in interpreting this finding is that the outcomes in the current research were social in nature. We do not suggest that social identity motivation is universally more important than any of the other motivations to vegetarians, as variance in non-social outcomes may not be as strongly explained by social identity motivation. In fact, as Table 1 shows, social identity motivation was among the least-strongly endorsed of the motivations for vegetarianism. Social identity motivation, thus, is likely a motivation that operates at a less salient, more automatic level of cognition, rather than one with which individuals consciously engage and explicitly identify.

Nevertheless, even if it is the case that individuals engage less consciously or readily with social identity motivation, our findings suggest that individual differences in social identity motivation offer meaningful insights into vegetarians' attitudes and behaviors. Notably, social identity motivation was the only motivation that significantly predicted the extent to which individuals cheat on their vegetarianism. Thus, a vegetarian's underlying sense of social identity motivation may play an important role in his or her adhering to meat abstention. We also suspect that social identity motivation may be one that becomes increasingly important to individuals over time after they go vegetarian—in contrast to other motivations (e.g., animals, health), which earlier on play key roles in propelling individuals to change their dietary status from omnivorous to vegetarian.

Our conceptualization of social identity motivation as a unique motivation underlying vegetarianism can provide novel insights into understanding why dietary *behavior* and dietary *identity* can at times diverge, such that individuals who eat some meat may nevertheless self-identify as vegetarian (e.g., Dietz et al., 1995; Jabs et al., 2000; Rothgerber, 2017; White et al., 1999). One potential reason as to why some individuals are lenient in self-identifying as vegetarian is that they see proclaiming this social identity as beneficial to their self-image. Empirical support for this notion comes from our finding that greater social identity motivation for vegetarianism predicted lower adherence to a strictly vegetarian diet. The current research is the first, to our knowledge, to conceptualize social identity goals as a unique impetus for subscribing to vegetarianism—one that may motivate individuals to call themselves vegetarian, even in the absence of consuming a truly vegetarian diet.

As a final note, at first glance it seems to run counter to our hypothesis that social identity motivation is negatively associated with disclosure of one's vegetarian identity. After all, if social identity motivation involves gaining self-esteem from belonging to a desirable group, it would seem to follow that one motivated by social identity should aim to disclose this identity to others. That said, research on the application of social identity theory to stigmatized minority groups helps contextualize this seemingly paradoxical finding. For example,

members of stigmatized fan groups are often reluctant to disclose their group identities to others for fear of negative repercussions; nevertheless, they strongly identify with those same groups when those groups allow them to feel distinct and provide them with sense of belongingness (Mock et al., 2013; Plante et al., 2015). In short, those motivated by social identity may not disclose their vegetarian identity to non-vegetarians for fear of backlash, given vegetarianism's stigmatized nature (Kellman, 2000; LeRette, 2014; Minson & Monin, 2012; Purdie-Vaughns et al., 2008). They may, however, be “openly” vegetarian around other vegetarians and gain self-esteem from being recognized as a member of the vegetarian community by other vegetarians. Future research would do well to investigate this possibility by assessing not just *whether* vegetarians disclose their vegetarian identity to others, but *to whom* and *when* they choose to disclose (e.g., when they are feeling low in self-esteem or when doing so would confer a self-esteem boost).

### 7.1. Limitations

Perhaps the biggest of the current study's limitations is its correlational nature. Because of our study's cross-sectional design, we are unable to draw causal conclusions about its results. As such, it is entirely possible, for example, that people who hold vegetarianism in high regard are more likely, in turn, to be social identity-motivated to identify as vegetarian themselves, rather than the reverse whereby vegetarians who are highly social identity-motivated are more likely, in turn, to hold vegetarians in high regard. One way to address this limitation in future studies is to experimentally manipulate participants' perceived motivation for being vegetarian, perhaps by randomly assigning them to write about feeling motivated to be vegetarian for either social identity or ecological reasons. Alternatively, one could replicate the present study with a longitudinal design. A cross-lagged analysis would allow for at least a preliminary test of directionality of the observed relationships. If social identity motivation becomes increasingly salient and important for individuals soon after they go vegetarian, as we suspect, then new vegetarians who have given up meat only recently make for particularly apt samples for longitudinal research. Such a design would also do well to take into account a number of potentially important moderator variables (e.g., length of time on one's diet, age, gender) to assess the role of situational and individual differences in the effect of social identity motivation on outcomes of theoretical and practical interest.

Another limitation of the present study is its reliance, in some cases, on fairly short measures of motivation or, in the case of social identity motivation, on measures that have not been validated. While many of the scales have not yet been rigorously validated, many of their constituent items have, however, been adapted from an existing, previously validated measures (e.g., Rozin et al., 1997). Nevertheless, future studies would do well to establish and validate fuller, more thorough measures of each of the proposed motivational factors, ideally in a multifactor questionnaire assessing all of the motivational factors simultaneously within the same model. Investigators may also wish to simultaneously test the UMVI's prosocial, personal, and moral motivations by drawing upon these subscales within Rosenfeld and Burrow's (2018) Dietarian Identity Questionnaire (DIQ). Testing the unique predictive value of social identity motivation over and above the UMVI's prosocial, personal, and moral motivations would be valuable. With respect to the measure of religious motivation used in the present study specifically, it should be noted that the wording of the single-item measure is such that a non-religious person could nevertheless answer in the affirmative with the statement “I am a member of a group or movement that rejects meat or food.” Given that the sample itself is not particularly religious and endorsement of this item was fairly low among the sample, coupled with the fact that the two items are significantly correlated ( $r = .124, p = .03$ ), we can treat the item as a proxy for religious motivation. Nevertheless, future studies would do

well to use a more thorough measure of religious motivation, one that has been well-validated and which more precisely assesses religious motivation.

A third limitation of our study is its recruitment technique. The sample was recruited through social media pages for vegetarians and vegans, meaning it will necessarily be comprised of people for whom vegetarianism is already a fairly important part of their self-concept – important enough to sign up to be part of a publicly-viewable social media group. As such, the generalizability of our findings may be limited to those who strongly identify as vegetarians, and may not apply to those vegetarians who do not publicly identify as vegetarians or for whom their self-concept does not strongly include vegetarianism. Future research on the subject of social identity motivation can address this concern by recruiting vegetarians from other, more public venues (e.g., universities, shopping malls) to determine whether the relationship between social identity motivation and the outcome variables assessed is an idiosyncrasy of highly-identified vegetarians or whether it holds across the entirety of the vegetarian community.

A final limitation of the current study was its lack of behavioral outcomes. While many of the measures attempted to assess behavior (e.g., frequency of cheating on one's vegetarian restrictions), they are grounded in self-report, rather than direct observation of behavior. This is largely a product of collecting data via online survey. Future studies would do well to replicate the current study's measures of vegetarian motivation while also assessing behavioral variables in a laboratory setting. This may include, for example, giving participants a chance to interact with a vegetarian or omnivore; a choice of which of multiple charities to allocate funding to; or the opportunity to punish, or aggress against, a supposed vegetarian they witness eating meat.

## 8. Conclusion

In this research, we tested the relationship between multiple motivational factors underlying vegetarianism and a variety of dietary attitudes and behaviors. We also assessed the unique ability of social identity motivation to explain variances in these outcomes. Results revealed that social identity motivation uniquely explained variance in four of the eight total outcome variables, suggesting that there is value in considering it as a distinct motivational facet in future research. The current research also represents one of the few existing empirical tests simultaneously pitting multiple motivational factors for vegetarianism against one another. Ultimately, our findings suggest not only that vegetarianism is best conceived as its own social identity, but also that the desire to adopt and affirm a vegetarian identity may be a unique and meaningful motivation underlying the choice to forgo meat.

## Declarations of interest

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