



A comparison of dietarian identity profiles between vegetarians and vegans

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ABSTRACT

Vegetarianism and veganism are often grouped together in nutritional and psychological investigations. Yet an emerging body of literature has highlighted that vegetarians and vegans differ along a number of neurological, attitudinal, and behavioral variables. In this research, I found that vegetarians and vegans exhibit different dietarian identity profiles. Compared to vegetarians, vegans saw their dietary patterns as more intertwined with their identity (higher centrality), had more positive feelings toward their dietary in-group (higher private regard), felt as if other people judge them more negatively for following their dietary patterns (lower public regard), evaluated out-group dieters more negatively (lower out-group regard), and had stronger motivations for following their dietary patterns (higher prosocial, personal, and moral motivations). By distinguishing between vegetarians and vegans more concretely, investigators can capture meaningful within-group heterogeneity in how people think, feel, and behave when it comes to eschewing animal products.

1. Introduction

Vegetarianism and veganism are often grouped together in nutritional and psychological investigations (American Dietetic Association, 2003; Greenebaum, 2012; Ruby, 2012; Rothgerber, 2017). Both practices entail a restricted dietary intake of animal products, but they do so to varying extents: Whereas vegetarians refrain from consuming meat, vegans refrain from consuming any type of animal product (typically, red meat, poultry, fish, egg, and dairy; sometimes also honey, gelatin, etc.) (Ruby, 2012). Beyond this difference in food selection, an accumulating body of literature suggests that vegetarians and vegans differ from one another along a number of neurological, attitudinal, and behavioral variables (e.g., Kessler et al., 2016; Rothgerber, 2015a, 2015b; Rothgerber, 2017). Moreover, eating behaviors are intertwined with identity, shaping how people understand who they are and communicate that understanding to others (Bisogni, Connors, Devine, & Sobal, 2002). Might, then, vegetarians and vegans construct and rely on different senses of self when it comes to eating?

Although vegans are conceived conventionally as a subgroup of vegetarians (Beardsworth & Keil, 1992; Rosenfeld & Burrow, 2017a; Ruby, 2012), many vegans perceive themselves as categorically unique from other types of vegetarians (Newport, 2012). That is, some vegans refrain from self-identifying as vegetarian, viewing veganism as distinct from—rather than a subset of—vegetarianism. This self-identification appears to contrast conventional rationale: Vegetarians are people who do not eat meat; vegans do not eat meat; yet many vegans do not

consider themselves vegetarian. This contrast calls for research to elucidate psychological phenomena surrounding nuances in eating behavior. To avoid terminological ambiguity in doing so, some scholars (e.g., Graça, Oliveira, & Calheiros, 2015; Potts & Parry, 2010; Rothgerber, 2015b) have employed the term, *veg*nism*, as an overarching label to refer to both vegetarianism and veganism inclusively, a method I adopt from here on.

In reviewing the social-scientific literature on *veg*nism*, Ruby (2012) noted that a limited, but promising, body of evidence had found significant differences between vegetarians and vegans, particularly concerning their attitudes toward animals and the environment. Since Ruby's (2012) review, additional research has furthered this line of inquiry by not only integrating work on social neuroscience (Filippi et al., 2013), social identity (Rothgerber, 2014b, 2014c, 2015b), and personality (Kessler et al., 2016), but also comparing people's attitudes toward vegetarians with those toward vegans (MacInnis & Hodson, 2017; Thomas, 2016).

In the current research, I applied Rosenfeld and Burrow's (2017a, 2018) model of *dietarian identity* to investigate whether vegetarians and vegans think, feel, and behave divergently with respect to their diets. Fundamentally, vegetarians and vegans differ from one another along two readily observable dietarian identity dimensions: label and dietary pattern (Rosenfeld & Burrow, 2018). That is, they self-identify in different ways (referring to oneself as vegetarian versus vegan) and set different dietary guidelines for themselves (typically, eschewing meat versus eschewing all animal products). Dietarian identity extends

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beyond dietary pattern and label, comprising eight psychological variables that include centrality; private, public, and out-group regards; prosocial, personal, and moral motivational orientations; and strictness (Rosenfeld & Burrow, 2018). These constructs characterize the extents to which people define themselves by their diets, hold their diets in positive or negative regard, judge other people for eating a diet different from their own, feel motivated to follow their diets, and adhere to their diets. Whereas previous research has found that dietarian identity profiles differ vastly between veg*ns and omnivores (Rosenfeld & Burrow, 2018), research has yet to examine veg*n within-group heterogeneity through this framework. Both theoretical perspectives and previous empirical findings suggest that vegetarians and vegans likely vary from one another on the majority of these constructs.

2. Literature review

For some veg*ns, following their dietary pattern may greatly shape how they think about who they are, leading them to define themselves by their veg*nism (Jabs, Sobal, & Devine, 2000). Such individuals are said to exhibit a high dietarian identity centrality, as their food choices are intertwined with their self-concept to a great extent (Rosenfeld & Burrow, 2018). By deviating from Western cultural dietary norms to a greater extent, vegans likely face stronger pressures to define themselves by their food choices than do vegetarians. Indeed, Rothgerber (2015a, 2015b) has found that vegans identify more strongly with their dietary in-group than do vegetarians. Accordingly, my first hypothesis was that vegans would exhibit a higher dietarian centrality than would vegetarians.

Two other core dimensions of social identification include private and public regards, which characterize a specific self-esteem one constructs around a particular identity domain (Luhtanen & Crocker, 1992). As related to dietarian identity, private regard refers to “one’s personal feelings toward following one’s dietary pattern and toward other people who also eat this way,” whereas public regard refers to “one’s feelings about how dietary out-group members and the larger society evaluate those who follow one’s dietary pattern” (Rosenfeld & Burrow, 2018, p. 184). A trend in the results of Rothgerber (2014c) appears to be such that vegans have higher attitudes toward other vegans than vegetarians have toward other vegetarians, suggesting that vegans have a higher private regard of the two groups. Yet vegans may have a lower public regard than do vegetarians, as they report facing more social challenges due to their food choices (Fiestas-Flores & Pyhälä, 2017). Moreover, whereas people often view vegetarian diets as healthful, they are more likely to perceive vegan diets as extreme, overly restrictive, and nutritionally deficient (Judge & Wilson, 2015; Povey, Wellens, & Conner, 2001). As one omnivore put it, “death sounds more promising than vegan” (Judge & Wilson, 2015, p. 63). Omnivores also hold more negative attitudes toward vegans than toward vegetarians (Judge & Wilson, 2018; MacInnis & Hodson, 2017) and view vegans, but not vegetarians, as less masculine than they view other omnivores (Thomas, 2016). Thus, compared to vegetarians, vegans may encounter greater backlash against their diets and internalize these more negative attitudes. Accordingly, my second and third hypotheses were that vegans would exhibit a higher private regard and lower public regard than would vegetarians.

Vegans might reciprocally exhibit more negative attitudes toward non-vegans than vegetarians exhibit toward non-vegetarians. Rosenfeld and Burrow (2018) call these types of out-group evaluations out-group regard, which can be defined as “one’s evaluation of people who follow a dietary pattern that differs from one’s own” (p. 184). Given that people readily judge other individuals’ moral characters when they violate moral rules surrounding harm and purity (Chakroff & Young, 2015; Uhlmann, Pizarro, & Diermeier, 2015), veg*ns who perceive out-group dieters’ food choices as moral breaches may be more inclined to impose negative character judgments on those individuals. Because vegans see greater moral problems with meat consumption, are more

disgusted by meat, and have lower attitudes toward meat-containing diets than do vegetarians (Povey et al., 2001; Rothgerber, 2015a, 2015b; Ruby, 2008; Ruby, Cheng, & Heine, 2011), vegans may be more likely than vegetarians to exhibit a lower out-group regard, judging omnivores particularly harshly for their food choices. Viewing vegetarians as morally inconsistent (Ruby, 2012) and hypocritical (Povey et al., 2001) for seeing a moral problem with eating meat yet still eating other animal products (namely, egg and dairy), vegans may take issue with vegetarians’ food choices as well (Colb, 2013; Potts & Parry, 2010). Vegans’ perceptions of egg and dairy consumption may lead them to consider vegetarians to be an out-group, in a similar sense in which they view omnivores for eating meat. In fact, a small proportion of vegans so much as refuse to have sexual relations with any non-vegans due to their moral objections to, and disgust toward, animal-product consumption (Potts & Parry, 2010). Some vegans, that is, exhibit a visceral reaction to animal-product consumption, which may make them averse toward human bodies that have consumed such products. Thus, based on this available body of evidence, my fourth hypothesis was that vegans would exhibit a lower out-group regard than would vegetarians.

Vegans might also exhibit different motivational orientations than do vegetarians. Compared to vegetarians, vegans are more concerned about the effects of their food choices on animal welfare, the environment, and political matters; support animal rights more strongly; are more disgusted by meat; and report ethical reasons for following their veg*n diet more commonly (Fiestas-Flores & Pyhälä, 2017; Haverstock & Forgays, 2012; Izmirlı & Phillips, 2011; Kessler et al., 2016; Lund, McKeegan, Cribbin, & Sandøe, 2016; Rothgerber, 2015a, 2015b; Ruby, 2008; Ruby et al., 2011). These findings make it unsurprising that vegans perceive animals as more mentally and emotionally similar to humans and feel guiltier about feeding their pets a meat-based diet than do vegetarians (Rothgerber, 2013, 2014a, 2015b). Differences in moral judgment between vegetarians and vegans have been demonstrated through not only explicit self-reports but also neural responses: When viewing depictions of animal suffering, vegans exhibit greater activation of certain empathy-related brain regions than do vegetarians (Filippi et al., 2010; Filippi et al., 2013). Thus, compared to vegetarians, vegans likely have higher prosocial and moral motivations, construing their dietary patterns as benefitting causes beyond themselves and as rooted in their moral principles. Moreover, vegans believe that a meatless diet is healthier than an omnivorous diet to a greater extent than do vegetarians (Ruby et al., 2011), suggesting that they may also have greater personal motivations underlying their food choices. The results of Hines (2010) support these notions, reporting that vegans deem both ethical and health motivations to be more important to them than do vegetarians. Thus, my fifth, sixth, and seventh hypotheses were that vegans would exhibit higher levels of prosocial, personal, and moral motivations than would vegetarians.

A remaining dietarian identity dimension is strictness—how closely one actually adheres to one’s dietary pattern (Rosenfeld & Burrow, 2017a, 2018). Rothgerber (2015a) found no significant difference between vegetarians and vegans on a measure of absolutism, or the perceived necessity of following one’s diet without exception. As Rothgerber’s (2015a) conceptualization and assessment of absolutism resembles that of dietarian identity strictness, it seemed unlikely that there would be a difference in strictness between vegetarians and vegans. Still, given the lack of prior research on this topic, I sought to add to Rothgerber’s (2015a) finding by exploring this comparison in the current study. On the one hand, evidence exists to suggest that vegans’ greater feelings of disgust toward meat may lead them to eschew meat more strictly than would vegetarians (Rozin & Fallon, 1987). Yet also important to note is that acts of low strictness embody different dietary decisions for vegetarians and vegans. For example, consuming egg or dairy would likely constitute a dietary violation for a vegan but not for many vegetarians. Thus, vegans would be inclined to encounter more non-vegan foods than vegetarians would be to encounter non-

vegetarian foods—that is, more opportunities to violate their diets. The extents to which social norms and pressures, the availability of appropriate food options, and varying feelings of disgust toward different types of animal products shape vegetarians' and vegans' rates of dietary adherence remain unknown. Accordingly, I set no specific hypothesis regarding whether a difference would emerge between the two groups on strictness.

3. Method

3.1. Participants

Participants included 167 English-speaking veg**n* adults from the United States who completed an online survey. This convenience sample derived from a composite of five larger samples, recruited across five survey administrations. I obtained three of these samples from Rosenfeld and Burrow (2018) via the Open Science Framework (OSF) at <https://osf.io/2agwb/>. Participants in the first two of these samples were recruited via Amazon Mechanical Turk (MTurk) and compensated \$1.00, whereas participants in the third study were recruited via a large university in the northeastern United States and received course extra credit. The total number of participants in each of these three samples, respectively, was 300, 303, and 435. For the current study's fourth sample, I recruited an additional 176 participants from the same university as in Rosenfeld and Burrow's third sample in exchange for course extra credit. These four samples were recruited from general populations diverse in terms of their dietary statuses, including both veg**ns* and omnivores.

In order to increase statistical power further, I recruited a fifth sample, comprised of 52 veg**n* participants, by posting flyers on social media pages centered on veg**n*ism. These flyers advertised a survey on how vegetarians/vegans think about their food choices. Participation in this fifth sample was restricted to self-identified veg**ns*. One in every 10 participants randomly received a \$20 Amazon.com gift card upon completing the survey. Rather than determining an a-priori sample size for these fourth and fifth samples, I set to cease data collection prior to the start of the university's 2018 spring break.

As such, a preliminary total of 1266 participants—all of whom completed the same survey materials—were considered for inclusion in this study. One hundred and seventy-nine of these participants self-identified as veg**n* and were included in this study's final sample. After excluding 12 participants who failed an attention check, 167 participants (79% female) between the ages of 18 and 68 ($M_{\text{age}} = 29.78$, $SD = 13.02$) were retained for analyses. While all participants verified that they were at least 18 years of age, one participant did not report a specific age. Of these 167 participants, 54 were recruited via MTurk, 62 via a large university in the northeastern United States, and 51 via social media. In total, 102 participants were vegetarian and 65 were vegan (see Table 1 for demographic information).

Table 1
Demographic information.

| Demographic | Vegetarians (<i>n</i> = 102) | Vegans (<i>n</i> = 65) |
|---------------------------|-------------------------------|------------------------------|
| Age (in years) | $M = 27.60$ ($SD = 11.34$) | $M = 33.27$ ($SD = 14.76$) |
| Gender | | |
| Male | 18 | 14 |
| Female | 83 | 49 |
| Other | 1 | 1 |
| Race | | |
| White/Caucasion | 74 | 47 |
| Black/African American | 5 | 2 |
| Hispanic or Latinx | 4 | 2 |
| Asian or Pacific Islander | 15 | 5 |
| Native American | 1 | 0 |
| Mixed race/ethnicity | 0 | 4 |
| Other | 3 | 2 |

A sensitivity analysis using G*Power 3 indicated that this final sample provided 90% power to detect medium effect sizes (Cohen's $d = 0.52$) between vegetarians and vegans at a significance threshold of $p = .05$.

3.2. Materials

3.2.1. Diatarian identity

Dietarian identity was assessed using Rosenfeld and Burrow's (2018) Diatarian Identity Questionnaire (DIQ). The DIQ began with an initial item that assessed which of the following animal products participants generally excluded from their diets: red meat, poultry, fish, egg, and dairy. If participants generally ate all of these foods groups, they were instructed to select a sixth response that read, "I generally eat all of these food groups." Below this item was a prompt highlighting that, for the rest of the survey, a participant's "dietary pattern" referred to those foods he or she indicated above.

Following this dietary pattern item, the DIQ included 33 items assessing centrality; private, public, and out-group regards; prosocial, personal, and moral motivations; and strictness. Each of these eight subscales exhibited strong internal consistency (Cronbach's α ranging from 0.71 to 0.94). Internal consistencies were strong among both vegetarian and vegan participants: Out of 16 alphas computed (8 diatarian identity variable alphas for vegetarians and 8 for vegans), only one was below 0.7 (the exact value of this alpha was 0.67), which was for private regard among vegans. An example item for centrality ($\alpha = 0.93$) included "My dietary pattern has a big impact on how I think of myself." An example item for private regard ($\alpha = 0.71$) included "People who follow my dietary pattern should take pride in their food choices." An example item for public regard ($\alpha = 0.91$) included "People who follow my dietary pattern are judged negatively for their food choices" (reverse-scored). An example item for out-group regard ($\alpha = 0.94$) included "I judge people negatively for eating foods that go against my dietary pattern" (reverse-scored). An example item for prosocial motivation ($\alpha = 0.93$) included "I view my dietary pattern as a way of making the world a better place for others." An example item for personal motivation ($\alpha = 0.87$) included "I follow my dietary pattern because I am concerned about the effects of my food choices on my own well-being." An example item for moral motivation ($\alpha = 0.91$) included "I feel that I have a moral obligation to follow my dietary pattern." An example item for strictness ($\alpha = 0.87$) included "From time to time, I eat foods that go against my dietary pattern" (reverse-scored). Responses to all items ranged from 1 (Strongly Disagree) to 7 (Strongly Agree).

3.3. Procedure

After consenting to take part in this research, participants first completed the DIQ. Participants completed the eight DIQ subscales in a randomized order. At the end of the survey, participants completed demographic questions and indicated whether they were vegetarian or vegan. Participants responded either "yes" or "no" to the following two separate questions: "Are you a vegetarian?" and "Are you a vegan?" Participants who indicated that they were vegetarians but not vegans were classified as vegetarians, whereas all participants who indicated that they were vegans were classified as vegans.

4. Results

Analyses comparing vegetarians and vegans were preregistered via OSF (see <https://osf.io/fu6jp/register/5771ca429ad5a1020de2872e> for preregistration). Data and analysis scripts are available at <https://osf.io/v4hmb/>.

People who consider themselves vegetarian follow a variety of different diets, such that many self-identified vegetarians eat certain types of meat (Ruby, 2012). In order to focus my investigation most closely

on the predictive value of identity rather than behavior, I determined participants' vegetarian and vegan statuses based on their self-reported dietary labels—that is, whether participants reported seeing themselves as vegetarian or vegan—rather than their dietary patterns. Of those participants who self-identified as vegetarian, 61% eschewed red meat, poultry, and fish; 29% eschewed red meat and poultry but consumed fish; 6% eschewed red meat but consumed poultry and fish; and a remaining 4% followed some other type of dietary pattern. Of those participants who self-identified as vegan, 85% excluded all animal products (red meat, poultry, fish, egg, and dairy) from their diets.

First, I tested whether homogeneity of variance—an assumption underlying independent samples t-tests—existed between vegetarians and vegans for all eight dietarian identity variables. Levene's tests for equality of variance revealed that variances were equal for centrality, $F(1, 166) = 0.95, p = .84$, private regard, $F(1, 166) = 1.24, p = .34$, public regard, $F(1, 166) = 0.89, p = .63$, personal motivation, $F(1, 164) = 1.38, p = .15$, and strictness, $F(1, 166) = 0.81, p = .37$, and unequal for out-group regard, $F(1, 166) = 1.88, p = .004$, prosocial motivation, $F(1, 166) = 0.58, p = .02$, and moral motivation, $F(1, 166) = 0.50, p = .003$. Accordingly, I conducted unadjusted t-tests for those outcomes on which vegetarians' and vegans' variances were equal and Welch-adjusted t-tests for those outcomes on which the two groups' variances were unequal. These t-tests revealed that, compared to vegetarians, vegans reported a higher centrality, higher private regard, lower public regard, lower out-group regard, higher prosocial motivation, higher personal motivation, and higher moral motivation. There was not a significant difference between vegetarians and vegans on strictness (see Table 2).

5. Discussion

I found support for all seven of my hypotheses, with vegetarians and vegans differing from one another along all dietarian identity dimensions except for strictness. Whereas the difference between vegetarians and vegans on personal motivation was small, effect sizes of the other six significant differences ranged from medium to large. In particular, these results suggest that vegetarians and vegans exhibit divergent patterns of in-group identification, such that vegans see their dietary patterns as more intertwined with their identity (higher centrality), have more positive feelings toward their dietary in-group (higher private regard), and feel as if other people judge them more negatively for following their dietary pattern (lower public regard). Furthermore, vegans appear to evaluate people more negatively for eating animal products than vegetarians evaluate people for eating meat (lower out-group regard). Vegetarians and vegans also exhibited divergent motivational orientations, following their diets with different types of goals in mind. The current results suggest that, compared to vegetarians, vegans are more motivated by causes that extend beyond themselves

(higher prosocial motivation), self-focused aims (personal motivation), and considerations of right and wrong (higher moral motivation). While additional research is needed to verify the specific sources from which vegans derive these greater motivations, research on vegans' motivations reviewed earlier suggests that these findings may reflect vegans' greater concerns about the effects of their diets on animals, their health, and the environment (Rosenfeld & Burrow, 2017b).

Here, I observed no significant difference in the extents to which vegetarians and vegans adhere to their dietary patterns. As such, vegetarians and vegans might violate their diets similarly infrequently. Yet vegetarians and vegans set for themselves varying degrees of dietary restrictiveness, such that vegans forgo a wider range of animal products than do vegetarians. Many vegetarians, meanwhile, forgo only meat (only 20% of vegetarians in the current study eschewed egg and/or dairy). The current study's results cannot speak to whether vegetarians and vegans eat meat with different frequencies. As both vegetarians and vegans forgo meat, examining dietary strictness with respect to meat avoidance in particular—rather than participants' dietary patterns—may be of interest to future work.

Future research is also needed to clarify causal links between vegetarian-versus-vegan status and dietarian identity. For example, do vegans exhibit a higher dietarian identity centrality than do vegetarians because people with a higher centrality are more likely to go vegan or because going vegan leads one to develop a higher centrality? I speculate that the latter explanation is more probable, as identifying with a social category whose defining behavior deviates further from a sociocultural norm may promote stronger in-group identification. Still, however, might people with a proclivity to define themselves by their food choices be more likely to experiment with their eating behaviors or seek out a deviant identity by going vegan? These same lines of reasoning may apply to differences between vegetarians and vegans on private, public, and out-group regards as well.

The link between veg*n status and motivation presents another interesting case. Do vegans exhibit higher levels of prosocial and moral motivations than do vegetarians because people with these motivations are more likely to go vegan or because going vegan makes people more prosocially and morally motivated? Evidently, dietary motivations can precede dietary decisions. Nevertheless, self-perception theory (e.g., Bem, 1972) and social identity theory (e.g., Turner, 1982) can suggest that, after going vegan, people might experience increased feelings of prosocial and moral motivations from internalizing in-group attitudinal norms or from revising their ethical attitudes toward food to align with their dietary behaviors.

In the current study, I determined participants' vegetarian and vegan statuses based on whether they identified themselves as such, thus using label—rather than dietary pattern—as the criterion. With this method, which specific foods and non-food animal products participants eschewed remained unrelated to the research question at hand. An interesting distinction that can be made in future research on dietarian identity—as other studies (e.g., Piazza, McLatchie, & Olesen, 2018; Piazza et al., 2015) have done—is that between lifestyle vegans (who refrain from consuming or using animal products in any form, such as wearing leather or using products tested on animals) and dietary vegans (who refrain from eating animal products but will use animal products in other forms).

A limitation of the current study is that vegetarian and vegan participants' demographics appeared to differ, with vegans being older and more likely to be male. As the current study utilized a convenience sample of participants recruited from multiple sites (one of which included a university campus), it is difficult to determine whether these demographic differences directly shape the decision to follow a veg*n diet and the identity one derives from that eating behavior. Future research is needed to examine links between demographics, dietary status, and psychological outcomes such as dietarian identity.

Ultimately, this study's findings suggest that vegetarians and vegans construe their dietary patterns in divergent ways. Relative to people

Table 2
Dietarian identity differences between vegetarians and vegans.

| Dietarian Identity | Vegetarians (<i>n</i> = 102) Mean (SD) | Vegans (<i>n</i> = 65) Mean (SD) | <i>t</i> -value | Cohen's <i>d</i> | <i>p</i> -value |
|----------------------|---|---|-----------------|------------------|-----------------|
| Centrality | 4.96 (1.41) | 5.90 (1.38) | 4.22 | 0.67 | < 0.001 |
| Private Regard | 5.50 (0.86) | 5.98 (0.96) | 3.38 | 0.53 | < 0.001 |
| Public Regard | 3.66 (1.60) | 2.88 (1.51) | 3.14 | 0.50 | 0.002 |
| Out-Group Regard | 5.63 (1.29) | 4.14 (1.78) | 5.85 | 0.96 | < 0.001 |
| Prosocial Motivation | 5.29 (1.43) | 6.15 (1.08) | 4.38 | 0.68 | < 0.001 |
| Personal Motivation | 5.45 (1.27) | 5.89 (1.49) | 2.02 | 0.32 | 0.045 |
| Moral Motivation | 4.98 (1.64) | 6.23 (1.16) | 5.74 | 0.88 | < 0.001 |
| Strictness | 5.47 (1.71) | 5.69 (1.54) | 0.83 | 0.14 | 0.405 |

who eschew only meat, people who eschew all animal products appear to have stronger dietary motivations, to derive greater identity and pride from their dietary group membership, to feel more stigmatized about having that group membership, and to judge out-group dieters more adversely. By distinguishing between vegetarians and vegans more concretely, investigators can capture meaningful within-group heterogeneity in how veg*ns think, feel, and behave when it comes to food and eating.

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