



Research report

Can you have your meat and eat it too? Conscientious omnivores, vegetarians, and adherence to diet



Hank Rothgerber*

Bellarmine University, 2001 Newberg Rd., Louisville, KY 40205, USA

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ABSTRACT

As criticisms of factory farming continue to mount, an increasing number of individuals have changed their existing dietary practices. Perhaps the two most important food movements reacting against industrial farming are (1) vegetarianism, the avoidance of animal flesh; and (2) conscientious omnivorism (CO), the consumption of meat or fish only when it satisfies certain ethical standards. While the former group has been well-studied in the social science literature, there have been few, if any, studies specifically examining those who identify themselves as ethical meat eaters. The present research sought to determine if one particular diet was more greatly adhered to by its followers. Results revealed that COs were less likely to perceive their diet as something that they absolutely needed to follow, reported violating their diet more, felt less guilty when doing so, believed less in animal rights, were less disgusted by factory-farmed meat, rated its sensory characteristics more favorably, and were lower in ingroup identification than vegetarians. Mediation analysis demonstrated that differences in the amount of violations and guilt associated with these violations could in part be traced to practical and psychological factors, making it more difficult to follow conscientious omnivorism.

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Introduction

Criticisms of factory farming have become more pronounced the past decade, as a number of popular press books (e.g., *Fast Food Nation*, Schlosser, 2001; *Eating Animals*, Foer, 2009) have described the inhumane treatment of factory-farmed animals and independent reports by the [Pew Commission on Industrial Farm Animal Production \(2008\)](#) and the [United Nations \(2006\)](#) have raised other negative consequences of industrialized farming. Individuals sensitive to these concerns have turned to two distinct dietary alternatives. The first, *vegetarianism* – the avoidance of animal flesh – dates back to ancient Greece. The second, *ethical meat eating* – the consumption of meat or fish only when it satisfies certain ethical standards – is a recent development. While the psychological aspects of vegetarianism are beginning to be better understood – a recent review (Ruby, 2012) referred to it as a “blossoming” field of inquiry and included 133 citations – research on ethical meat eating is in its infancy and has lagged behind its social significance.

The ethical meat eating movement traces its foundation to Michael Pollan's 2002 *New York Times* essay “An Animal's Place.” Pollan argued that smaller, humane farms and the meat they produce contribute more to the collective good than the achievement of vegetarian goals would. In the first place, animals are relatively free to

do as they please on such farms and to engage in behaviors natural to their species which appear to promote their happiness and well-being. Pollan noted that this “good life” would be impossible if humans forfeited consuming meat. Left to their own devices, animals would lead a far more difficult life seeking prey and ultimately succumbing to predation. Pollan extended his arguments beyond the luxury of happiness, arguing that without humans raising animals on farms for consumption, each species would face extinction, i.e., their survival is dependent on humans raising them for food. He cited animal scientist Steve Davis who claims that vegetarianism would increase the total number of animals killed every year and that the way to save the most animals is by consuming the largest animal that can live on the least intensively cultivated land: grass-fed beef. Pollan also appealed to environmental benefits of eating animals allowed to roam freely. Such animals improve the health of the land and lessen reliance on fossil fuels and chemical fertilizer by decreasing the distance food needs to travel and by increasing manure.

Pollan's argument is significant for several reasons: It is the first to offer an alternative between absolute vegetarianism (likely unappealing to many) and unrepentant omnivorism (condoning the disturbing treatment of animals); it implies that it is the suffering of animals, not the killing of them that should warrant our concern; and it suggests that (from a utilitarian perspective) eating meat produced in certain environments is not only morally defensible but superior to vegetarianism. As such, it offers a way to resolve what has been termed the *meat paradox* (Bastian, Loughnan, Haslam, &

* E-mail address: hrothgerber@bellarmine.edu.

Radke, 2012) – “I eat meat but I don’t like inflicting suffering on animals.” Although unable to effectively name it (he suggested *humanocarnivore*), Pollan recognized that he was proposing a new dietary category.

During the next few years, several philosophers made formal cases extolling the virtues of ethical meat eating. The first of these was Michael Scruton’s (2004) essay entitled “The Conscientious Carnivore” [Suggesting that Scruton’s (2004) reference to a carnivore was not the most appropriate term because it implied a diet only consisting of meat, Singer and Mason (2006) offered “conscientious omnivores” (COs) to describe individuals who only consume animal flesh that has met certain ethical standards, a term that will be adopted in the present research]. Scruton rejected vegetarian arguments on behalf of the rights of animals thus enabling meat consumption while he simultaneously emphasized human duties to care for animals and prevent them from living tormented lives, thus criticizing unrepentant omnivorism and its condoning of factory farming. Schedler (2005) subsequently argued that relative to universal vegetarianism or eating industrial meat, ethical meat maximizes utility. His case was predicated upon two main propositions: Individuals are morally obligated to adopt any practice that would maximize the likelihood of the greatest satisfaction of desires of animals and humans; and without sacrificing anything of greater moral value, ethical meat eating would most likely reduce animal suffering and increase human and animal pleasure more than universal vegetarianism or present dietary practices. In the last case, it is clear that with its emphasis on maximizing pleasure and minimizing pain, utilitarianism would argue against factory farming and the way that it denies animals freedom of movement, the ability to engage in behaviors natural for their species, and lives free of great pain. However, in both classical and Singer’s (1993) preference utilitarianism, there is nothing wrong with eating and killing animals as long as the animals are raised humanely, killed painlessly, and replaced by equally happy animals¹ (see Gruen, 2011).

While it is difficult to estimate exactly how many individuals have been influenced by these ideas and adopted a diet in which they exclusively eat ethical meat, to some degree the CO movement is an outgrowth of concerns held by those regularly consuming factory-farmed meat. That is, it is clear that a large number of individuals have similar reservations about farm animal welfare as those fully embracing conscientious omnivorism. Recent U.S. academic research indicates that the vast majority of consumers want farm animals to be well cared for (Grimshaw, Miller, Palma, & Kerth, 2014; Prickett, Norwood, & Lusk, 2007; Rauch & Sharp, 2005), would support laws protecting farm animals from cruelty (Zogby International, 2003) and granting them enough space to behave naturally (Humane Research Council, 2008), and want greater access to such information, with 62% favoring mandatory labeling of eggs produced using cages and 62% supporting labeling of pork produced on farms using gestation crates (Tonsor & Wolf, 2011).

These attitudes about farm animal welfare are reflected in reported intent to purchase ethical meat (Rauch & Sharp, 2005) and when examining macro level data, actual purchasing behavior. For example, according to the United States Department of Agriculture (USDA) research (Dimitri & Oberholtzer, 2009), the amount of money spent on organic dairy products increased more than

seven-fold from 1997 to 2008, increasing from less than \$500 million to under \$3500 million. Organic² meat is one of the fastest growing sectors in the organic industry, with total retail sales increasing by a factor of 46 between 1997 and 2007. From 2000–2005, organic poultry sales increased on average 39% annually, beef and milk cow sales increased on average 20% annually, and pig and hog sales increased 58%. Although not directly assessing how many individuals identify themselves as being COs, 17% of adults had purchased USDA organic poultry within the three months prior to the study onset and 16% had purchased organic red meat (Mintel Group Ltd, 2013).

Despite its increasing significance, then, it is surprising that so little social science research has examined COs. Several studies have assessed how often individuals consume ethical meat and characteristics predicting such behavior (e.g., de Boer, Boersema, & Aiking, 2009; de Boer, Hoogland, & Boersema, 2007), and one small-sample qualitative study examined ethical attitudes about meat purchases among Scottish meat eaters (Schröder & McEachern, 2004), but I am only aware of one study specifically examining those who identify as COs (Rothgerber, 2014a). In this study, COs were compared to vegetarians in their attitudes toward living animals and dead animals served as meat, and in ingroup identification. COs were more likely than meat abstainers to believe that it is the suffering of animals used in food production, not the killing of them, that is problematic. This belief difference was mediated by less perceived animal favorability and less disgust and dislike of factory-farmed meat among COs than meat abstainers.

In addition to displaying attitudinal differences from meat abstainers, COs were also less likely than vegetarians to identify with their dietary group and to consider it an important part of their identity. This suggests that COs are less likely to perceive their diet as having relevance for their sense of self. COs may view certain food products as merely something to avoid whereas vegetarians may more strongly define themselves as individuals who avoid certain food products, deriving a great deal of meaning from this behavior. Subverting this meaning by breaking dietary rules, then, may be particularly disturbing to vegetarians, whose self-concept may be predicated upon conformity to ingroup norms of meat abstinence.

That vegetarians may feel more pressure and may subsequently more faithfully adhere to their dietary convictions seems consistent with critics of conscientious omnivorism, who argue that its proponents do not regularly follow their diet. Animal rights advocate Bruce Friedrich has noted:

What does it say that the leaders of the “ethical meat” charge, like my friends Eric Schlosser and Michael Pollan and even the Niman Ranch farmers, regularly pull money out of their pocket and send it off to factory farms? To me, it says that “ethical carnivores” is a failed idea; even the most prominent advocates don’t do it full-time. I have met countless people who were moved by Eric’s and Michael’s arguments, but none of them now eat exclusively Niman-type meat. They are either vegetarians or they continue to eat at least some factory-farmed animals (Foer, 2009, p. 214).

Catherine Friend, who has written several books outlining the terrible conditions of factory farming and who lives on a farm claiming to raise animals humanely, has even noted in her book *Compassionate Carnivore* (2009) that she currently eats factory-farmed meat in 25% of her meals. As Stanescu (2013) noted, if

¹ Gruzalski (2004) provides a clear exception to the utilitarian justification for ethical meat eating. He specifically rejects the implicit claims made by ethical meat eating that the burdens of food source animals are outweighed by their pleasures and that there is no alternative practice that would increase the foreseeable amount of positive consequences in the world. In the first case, he notes that food source animals are often killed in the prime of their lives, often in horrific slaughterhouses, and prior to this, experience a restriction of their natural activities. To the last point, vegetarianism represents a clear alternative, causing no unnecessary suffering to animals and contributing to pleasure and health among its followers.

² Organic meat, poultry, and eggs, as defined by the USDA’s national organic standards, are made from animals raised under organic management. To qualify, the animals must be raised separately from animals intended to be marketed as non-organic, must receive no antibiotics or growth hormones, must receive preventive medical care, must eat 100% organic feed, must have access to the outdoors, shade, exercise areas, fresh air, and sunlight.

someone with her access to “humane” meat still consumes industrial meat one-quarter of the time, it is difficult to imagine other COs (who may also have less knowledge and expertise) doing much better.

There are several reasons why it may be more difficult for COs to faithfully follow their diet than vegetarians. First, initial differences in attitudes toward animals could make COs more likely to consume factory-farmed meat. Because vegetarians evaluate animals more favorably and more strongly endorse animal rights than COs do (Rothgerber, 2014a), they may find it easier to adhere to meat abstention. Violating their diet may lead to more personal distress as vegetarians would recognize they are eating something that they show greater empathy toward, that they believe is more similar to humans, and that is entitled to greater rights than COs believe. COs may find it easier to dismiss such thoughts about the animals involved in their violations of diet and may perceive it as more tolerable if they on occasion consume factory-farmed meat.

There is also the possibility that the CO diet itself may be more difficult to follow for practical reasons. When one eats “humane” meat, there is always the question of how exactly the animal was treated during its lifetime, whether it received a painless and distress-free slaughter, and how the consumer would know. Singer and Mason (2006), for example, report unpleasant conditions that they observed in farms that received organic/certified humane labels, including egg sellers in which the chickens were debeaked, given 1.2 square feet of space per bird, and denied outdoor access. They also describe problematic conditions on Joel Salatin’s oft-praised Polyface farm including rabbits being kept in small cages, chickens being kept in crowded wire pens (a practice receiving low marks by an independent agency and referred to as a “confinement system”), animals slaughtered off-site (without knowledge of conditions) because of legal requirements, and on-site slaughter practices including crowding animals and not stunning them before their throats were slit. These difficulties combined with the potentially misleading labeling of food products and the lack of stringent governmental regulations and standards related to such labeling may cause even a well-intentioned consumer to experience frustration and difficulty in eating meat raised according to their own personal standards.

Outside of these practical considerations, there may be less obvious psychological forces at work that make it easier to adhere to a vegetarian diet than to a CO diet. To begin with, there is the possibility that completely giving up meat is a more delineated behavior than selectively avoiding meat, and therefore lends itself better to identity building, as Rothgerber (2014a) demonstrated. Vegetarians also send a clear, unambiguous verbal and visual message to others. Because COs will likely consume meat in front of others, they may well be viewed by others as omnivores and treated as such. Given that their diet may be more difficult to explain (and accommodate) than a vegetarian diet, they may prefer to say nothing about it at all, blending with omnivores; all of this may weaken ingroup identification, and through lowered self-standards and decreased group pressure, adherence to diet.

In addition, the fact that COs still consume animal flesh may disrupt the development of disgust that Rozin, Markwith, and Stoess (1997) have noted creates strong moral opposition to violations of diet. That is, factory-farmed animal products are probably not dissimilar enough from ethical animal products in taste, smell, texture, and appearance to cultivate a disgust specific to factory-farmed foods the way that vegetarians can develop for meat and vegans for all animal products. Indeed, animal welfare can be considered a credence attribute (Grunert, Bredahl, & Brunsø, 2004), meaning that consumers cannot ascertain by themselves the presence of such characteristics even after consumption. That consuming a similar product would inhibit disgust for a taboo product has support from Rothgerber (2014a) who found stronger dislike of the sensory

qualities of meat among meat abstainers than COs. It has also received indirect support from Rothgerber (2014b), who found that self-identified vegetarians who nonetheless consumed animal flesh reported being less disgusted by meat. Research in other domains (e.g., romantic relationships) has demonstrated the importance of devaluing alternatives to maintain commitment (e.g., Johnson & Rusbult, 1989), and the same processes may apply here. Because they are cutting back on their meat intake, rather than eliminating it completely, COs may never develop a strong enough aversion to factory farmed animal flesh to overcome temptation to consume it, and may do so when it is the only meat available. In short, while they devalue the potentially inhumane treatment of the animal served as food, this devaluation may never transfer strongly enough to the actual food product itself.

The purpose of the present research was to ascertain how successful COs and meat abstainers were in strictly following their respective diets. From a practical perspective, it is important to know if one diet is easier to adhere to than another. Such information would be useful to individuals before they make decisions about diet choice, and may be beneficial to assist in future efforts devoted to increasing commitment to diet. Theoretically, the study may help examine whether in an effort to eradicate a behavior, it is better to stop engaging in activities close in proximity to the tempting behavior or to continue to persist in them. COs and vegetarians/vegans were measured on factors related to adherence to diet, including the number of diet violations, beliefs about the importance of always following their diet (absolutism), guilt over following their diet, and difficulty in following their diet. They were also assessed on certain measures used in prior research on COs including belief in animal rights, evaluation of meat, and ingroup identification. Because of the practical and psychological factors discussed above, it was expected that COs would report more dietary violations than vegetarians/vegans and less guilt over these violations. The number of reported violations was expected to be most directly related to beliefs about how necessary it is to always follow one’s diet. That is, individuals who believe it is okay to sometimes violate their diet will, through these lower standards, likely eat factory-farmed meat more frequently. The extent to which such violations would produce guilt was thought to be partially predicated upon how sympathetic individuals were toward animal rights and how disgusted by factory-farmed meat they were. In addition, how much they perceived it difficult to abstain from factory-farmed meat was expected to mediate their experience of guilt from eating it; to the extent that following a diet free of industrial meat is beyond an individual’s perceived control, their feelings of guilt over violations should be mitigated.

In the present study, participants’ motivation for following their diet was also measured. Rothgerber (2014a) did not include such a measure, and differences between COs and vegetarians/vegans may have resulted from differences in motivations between the groups. That is, because COs have been neglected in the literature, it is unclear how many individuals adopt conscientious omnivorism primarily from concerns about unhealthy chemicals and hormones added to factory farmed meat as opposed to concerns about the treatment of factory farmed animals. Because diet motivation has been found to predict both perceptions of animals (Rothgerber, 2013, 2014b) and evaluation of meat (Rothgerber, 2014b; Rozin et al., 1997), diet motivation was entered as a blocking variable to ensure that any effects for diet would not simply result from differences in diet motivation.

Method

Participants and procedure

Participants were recruited through several on-line groups organized around either vegetarianism/veganism [e.g., the Vegetarian

Resource Group (www.vrg.org]) or ethical meat eating (e.g., GoEO 3(www.go-eo.org/GoEO)). The leaders of these groups distributed a brief recruitment notice for a study on vegetarianism and ethical meat eating; depending on the organization, the advertisement was posted on facebook and twitter accounts, in newsletters, or emailed to members. The notice provided a link to the survey monkey website hosting the survey. Participants were offered entry into a \$50 lottery drawing in appreciation for their participation. The survey was accessible for 40 days during the Fall of 2013.

Participants who indicated that they were an ethical meat eater (i.e., *only* eating meat from farmers who raise their animals in a humane manner), vegetarian (*only* eating meals free of meat/fish), or vegan (*only* eating meals free of all animal products), for reasons primarily involving ethics or health, were included in the study. Sixty-nine potential participants (20 COs, 30 vegetarians, and 19 vegans) were excluded because they indicated that they were semi-ethical meat eaters or semi-meat abstainers (*mostly* eating meat from. . . or *mostly* eating meals free of. . .). In the end, the final data set included 556 participants. 18% of respondents were health COs (n = 98), 8% ethical COs (n = 45), 16% health vegetarians (n = 88), 21% ethical vegetarians (n = 118), 14% health vegans (n = 80), and 23% ethical vegans (n = 127). Of the total sample, 76% were females. 81% listed the U.S. as country of origin; 14% Canada, and 5% another country. The mean age of participants was 36.44 (SD = 12.97).

Measures

Number of diet violations

Participants were asked to give their best estimate of how many times they had knowingly violated their diet since they had adopted it. For COs, diet violations were specified as those involving eating factory-farmed meat; for vegetarians, violations consisted of eating meat; and for vegans, diet violations were defined as eating animal flesh or animal products.

Absolutism

To determine the extent to which participants believed it was important to absolutely follow their diet without exception, they were asked four items including “There is never a good enough reason to violate my diet” and “I must always follow my diet completely at all times.” Items were measured on a 7-point Likert scale (1 = *strongly disagree*; 7 = *strongly agree*) with higher scores revealing greater belief in the need to absolutely follow one’s diet (alpha = .90).

Guilt over violating diet

To assess how much guilt participants experienced over violating their diet, the researcher constructed a six item scale asking participants “If you broke or violated your diet, how much guilt would you experience from_____.” Four of the items assessed guilt associated with ethical concerns (e.g., “thinking of the animal harmed”) and two assessed guilt derived from health concerns (e.g., “hurting personal health”). Items were measured on a 6-point Likert scale (1 = *extremely small*; 6 = *extremely large*) with higher scores revealing greater guilt (alpha-ethical = .73; health: $r(565) = .65$, $p = .000$).

Difficulty in following diet

Participants were asked seven items measuring how difficult they found it to adhere to their diet. Questions included “How difficult is it to know if you are completely following your diet . . . in general; and when eating in restaurants?” Items were measured on a 7-point

Likert scale (1 = *extremely easy*; 7 = *extremely difficult*) with higher scores revealing greater difficulty following one’s diet (alpha = .87).³

Animal rights

Belief in animal rights was measured with a condensed, 9-item version of the Animal Rights Scale (ARS) designed by Wuensch, Jenkins, and Poteat (2002) to assess general attitudes toward animals. Sample items included, “Animals should be granted the same rights as humans,” and “It is wrong to wear leather belts and shoes.” Items were measured on a 6-point Likert scale (1 = *strongly disagree*; 6 = *strongly agree*) with higher scores revealing greater support for animal rights (alpha = .87).

Ingroup identification

Degree of ingroup identification was measured by an 8-item scale in which participants were asked to think about their dietary group in reference to items such as “I identify with other _____” and “Being _____ is an important part of my identity.” All items were measured on a 4-point Likert scale (1 = *strongly disagree*; 4 = *strongly agree*); (alpha = .90).

Meat disgust

Four items adapted from Rozin et al. (1997) were used to assess disgust associated with factory-farmed meat. A sample item included: “Eating factory-farmed meat is offensive, repulsive, and disgusting.” Items were measured on a 6-point Likert scale (1 = *strongly disagree*; 6 = *strongly agree*) with higher scores revealing greater meat disgust (alpha = .90).

Sensory dislike of meat

Borrowing from Rozin et al. (1997), participants were asked to evaluate three physical dimensions of factory-farmed meat separately: its taste, its smell, and its appearance, with higher scores indicating greater sensory dislike of meat (alpha = .97).

Results

Correlations between the measures are presented in Table 1. The majority of variables were significantly correlated with each other. Absolutism, ethical (but not health) guilt over violating one’s diet, belief in animal rights, meat disgust, sensory dislike of meat, and identification were all positively correlated with one another and all negatively correlated with perceived difficulty following one’s diet. Each dependent variable was subjected to a two (participant diet: conscientious omnivore, vegetarian, vegan) × two (diet motivation: health, ethical) ANOVA. Means, standard deviations, F/p values, and effect sizes are found in Table 2.

Those following their diet because of ethical concerns reported committing fewer dietary violations, scored higher in absolutism, ethical guilt (but lower in health guilt), belief in animal rights, ingroup identification, and meat disgust than those motivated by health concerns. For meat disgust, but not any of the other dependent measures, the participant diet × diet motive interaction was

³ The measures created for the present study displayed initial evidence of convergent and divergent validity. The loading estimates for the items assessing absolutism, ethical guilt (health guilt only had two items), and difficulty following diet exceeded .7 except for several cases falling slightly below .7. The average variance extracted (AVE) estimates all exceeded .5 (absolutism: .53; ethical guilt: .51; difficulty following diet: .64) and the construct reliability estimates all exceeded .7 (absolutism: .81; ethical guilt: .79; difficulty following diet: .91). Therefore, all the indicator items provided adequate evidence of convergent validity and were retained. In addition, all AVE estimates were larger than the corresponding squared interconstruct correlation estimates (SIC – absolutism: .53 vs. .09, .23; ethical guilt: .51 vs. .01, .23; diet difficulty: .64 vs. .01, .09). This means that the indicators had more in common with the construct they were associated with than they did with other constructs, providing initial evidence of discriminant validity.

Table 1
Correlations between outcome measures.

Scale	1	2	3	4	5	6	7	8	9
1. # of Violations	–								
2. Absolutism	–.17***	–							
3. Ethical guilt	–.07	.48***	–						
4. Health guilt	.02	.15***	–.34***	–					
5. Diet difficulty	.12**	–.32***	–.11**	.13***	–				
6. Animal rights	–.13**	.42***	.56***	.06	–.23***	–			
7. Meat disgust	–.07	.41***	.51***	.03	–.29***	.54***	–		
8. Sensory dislike	–.01	.26***	.21***	.07	–.30***	.31***	.47***	–	
9. Ingroup ID	–.05	.46***	.44***	.13***	–.15**	.43***	.39***	–.20***	–

* $p < .05$.
** $p < .01$.
*** $p < .001$.

Table 2
Differences between conscientious omnivores, vegetarians, and vegans in study outcomes.

Measure	Conscientious omnivores				Vegetarians				Vegans				F value	η^2		
	Health		Ethical		Health		Ethical		Health		Ethical					
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD				
# Vio.	101.0	403.5	31.0	80.7	4.7	9.9	2.72	9.52	16.0	63.8	3.22	6.00	5.33 ³	3.22 ¹	1.52	.02/.01/0
Absol.	2.92	1.69	3.95	1.65	4.57	1.59	5.34	1.53	4.41	1.84	5.26	1.63	37.15 ⁴	35.72 ⁴	0.23	.11/.05/0
Eth. guilt	3.24	1.02	3.65	0.80	3.63	1.22	4.22	0.93	3.89	1.29	4.47	0.91	18.89 ⁴	31.79 ⁴	0.36	.06/.05/0
Heal. guilt	4.42	1.12	3.51	1.55	4.55	1.43	3.38	1.85	4.78	1.59	3.46	1.74	.57	62.85 ⁴	.64	0/.10/0
Diet diff.	4.60	1.03	4.39	1.36	3.02	1.38	2.94	1.45	3.19	1.36	3.01	1.34	56.80 ⁴	1.78	0.12	.16/0/0
An. rights	3.06	1.03	3.57	0.99	3.43	0.97	4.10	0.97	4.08	1.02	4.79	0.89	53.49 ⁴	51.01 ⁴	0.40	.14/.07/0
Ingroup ID	2.26	0.62	2.54	0.79	2.72	0.70	2.92	0.64	2.89	0.70	3.21	0.63	35.85 ⁴	20.20 ⁴	0.36	.11/.03/0
Meat disg.	3.41	1.21	4.64	1.04	4.62	1.59	5.22	1.07	5.51	0.96	5.48	0.96	60.55 ⁴	32.96 ⁴	11.34 ⁴	.16/.04/.03
Sens. dislike	2.81	1.21	3.16	1.29	4.03	1.39	3.71	1.55	4.23	1.43	4.36	1.19	35.33 ⁴	0.21	2.66	.11/0/.01

Note: # Vio., number of violations; Absol., absolutism; Eth. guilt, guilt from ethical violations of diet; Heal. guilt, guilt from health violations of diet; Diet diff., difficulty in following diet; An. rights, animal rights; Ingroup ID, ingroup identification; Meat disg., meat disgust; Sens. disgust, sensory disgust. Higher means represent greater agreement. Under F value, the first F listed is the test of participant diet, the second diet motivation, and the third the interaction. Under η^2 , the first eta squared corresponds to participant diet, the second diet motivation, and the third the interaction.

¹ $p < .10$.
² $p < .05$.
³ $p < .01$.
⁴ $p < .001$.

significant. Post hoc tests revealed that for COs and vegetarians, ethically motivated participants expressed more meat disgust than participants motivated by health concerns ($F(1,139) = 34.27, p = .000$ and $F(1,198) = 10.11, p = .002$). For vegans, who as a group reported the highest levels of meat disgust, there was no difference in meat disgust between ethical and health motivated participants ($F(1,202) = .04, p = .836$).⁴

Independent of diet motivation, participant diet had a significant effect on all measures. Many of the effects were moderate to large. Conscientious omnivores were significantly different than vegetarians and vegans on all measures (at $p = .000$). They perceived their diet less as something they absolutely needed to follow, reported violating their diet more, felt less ethical guilt when doing so, reported more difficulty in following their diet, believed less in animal rights, were less disgusted by factory-farmed meat, rated its sensory characteristics more favorably, and were lower in ingroup identification than were vegetarians and vegans.

Although the primary purpose of the study was not to directly compare vegetarians and vegans, these two groups did differ from each other more often than not. Vegans displayed greater ethical guilt ($p = .034$), stronger endorsement of animal rights ($p = .000$), more meat disgust ($p = .000$), more sensory dislike of meat ($p = .002$), and greater ingroup identification ($p = .000$) than did vegetarians.

⁴ Although mean differences between ethical and health motivated vegans in meat disgust were highly similar, they were both near the high end of the scale, raising the possibility that ceiling effects may have obscured potential differences.

To determine why participants' dietary status affected the number of violations and guilt over such violations, the author followed the recommendations (and SPSS macros) of Preacher and Hayes (2008) and conducted a bootstrapped mediation analysis with multiple mediators examined simultaneously. First, using dummy coding, the author created two contrasts, the first involving COs (coded as 0) and vegetarians (coded as 1) and the second comparing COs (coded as 0) to vegans (coded as 1). For the number of violations, the first contrast revealed a significant total effect ($B = -77.45, p = .000$), with vegetarians less likely to commit violations than were COs. Next,

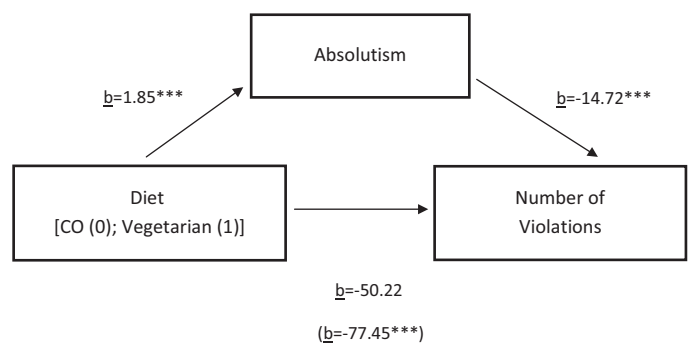


Fig. 1. Mediation model for the effect of participant diet (CO vs. vegetarian) on number of violations via absolutism.

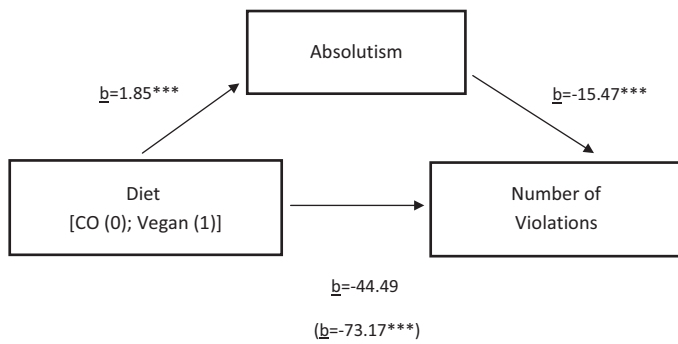


Fig. 2. Mediation model for the effect of participant diet (CO vs. vegan) on number of violations via absolutism.

the author regressed beliefs that it was absolutely wrong to violate one's diet onto dietary status, revealing a significant relationship ($B = 1.85, p = .000$). When absolutism was entered as a predictor with dietary status, dietary status was reduced as a predictor ($B = -50.22, p = .052$), and absolutism was a significant predictor ($B = -14.72, p = .000$). Examining the confidence intervals revealed that absolutism significantly mediated the more numerous diet violations by COs relative to vegetarians as evidenced by a 95% confidence interval which did not include zero ($-51.66, -13.07$). This model is summarized in Fig. 1.

For the CO–vegan contrast, there was a significant total effect ($B = -73.17, p = .000$), with vegans less likely to commit violations than COs. Absolutism ($B = 1.85, p = .000$) was significantly related to participants' dietary group. The direct effect of participants' dietary group was not significant when absolutism was entered ($B = -44.49, p = .085$) although absolutism was a significant predictor ($B = -15.47, p = .000$). Examining the confidence interval revealed that absolutism significantly mediated the fewer diet violations of vegans relative to COs as evidenced by a 95% confidence interval which did not include zero ($-53.75, -14.56$). This model is summarized in Fig. 2.

For guilt over violations involving the CO–vegetarian contrast, there was a significant total effect ($B = .46, p = .000$), with vegetarians more likely to express guilt than COs were. Next, the author regressed several mediators onto dietary status, revealing a significant relationship for difficulty following diet ($B = -1.43, p = .000$), animal rights ($B = .64, p = .000$), and meat disgust ($B = 1.27, p = .000$).

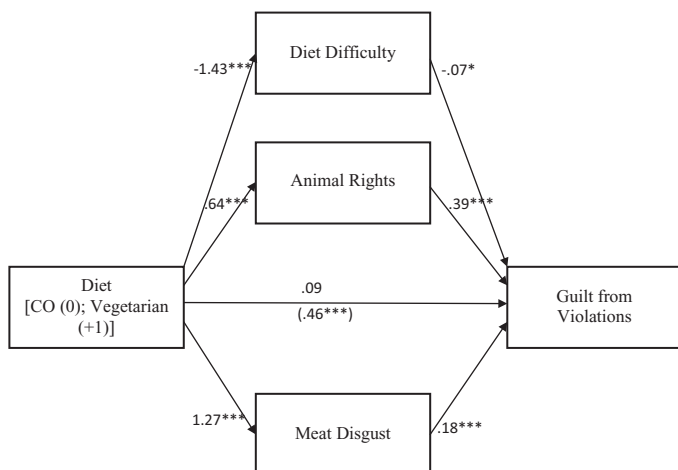


Fig. 3. Mediation model for the effect of participant diet (CO vs. vegetarian) on guilt from violations via diet difficulty, animal rights, and meat disgust.

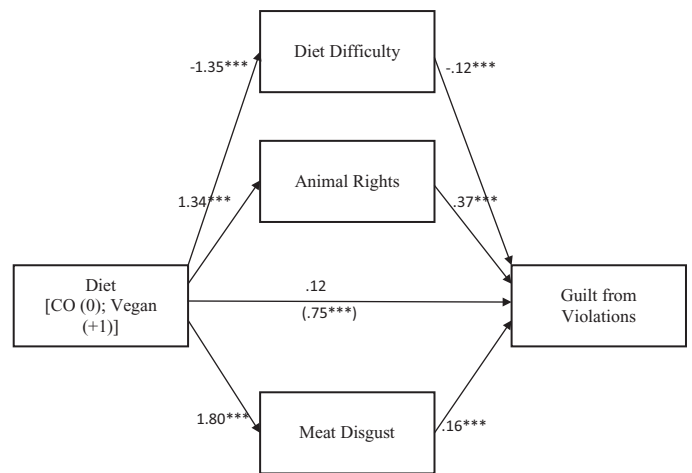


Fig. 4. Mediation model for the effect of participant diet (CO vs. vegan) on guilt from violations via diet difficulty, animal rights, and meat disgust.

When the mediators and dietary status were entered as predictors of guilt, the mediators were significant predictors (difficulty: $B = -.07, p = .044$; animal rights: $B = .39, p = .000$; and meat disgust: $B = .18, p = .000$); dietary status was not ($B = .09, p = .417$). Examining the confidence intervals revealed that in total, the three process measures significantly mediated the greater guilt of vegetarians relative to COs as evidenced by a 95% confidence interval which did not include zero ($.21, .53$); in addition, difficulty ($-.21, -.01$), animal rights ($.15, .36$), and meat disgust ($.13, .34$) were shown to be significant mediators. This model is summarized in Fig. 3.

For the CO–vegan contrast, there was a significant total effect ($B = .75, p = .000$), with vegans more likely to express guilt than COs were. The mediators were all significantly related to dietary status (difficulty following diet, $B = -1.35, p = .000$, animal rights, $B = 1.34, p = .000$, and meat disgust, $B = 1.80, p = .000$). When the mediators and dietary status were entered as predictors of guilt, the mediators were significant predictors (difficulty: $B = -.12, p = .000$; animal rights: $B = .37, p = .000$; and meat disgust: $B = .16, p = .000$); dietary status was not ($B = .12, p = .359$). Examining the confidence intervals revealed that in total, the three process measures significantly mediated the greater guilt of vegans relative to COs as evidenced by a 95% confidence interval which did not include zero ($.44, .82$); in addition, difficulty ($-.27, -.07$), animal rights ($.37, .67$), and meat disgust ($.14, .45$) were shown to be significant mediators. This model is summarized in Fig. 4.

Discussion

Similar to Rothgerber (2014a), COs differed from vegetarians in displaying less favorable attitudes toward animals, less disgust toward and dislike of dead animals served as meat, and lower ingroup identification. The present results extend prior work by demonstrating that these effects emerged even after averaging across diet motives. Independently, diet motives predicted a number of study outcomes⁵ with the health–ethical distinction mirroring the CO–vegetarian pattern of results.⁶ The general lack of significant interactions suggests that the health–ethical motive difference operated similarly within COs as vegetarians.

⁵ That health motivated participants were lower in meat disgust than ethical motivated ones replicated findings of Rozin et al. (1997).

⁶ COs were more likely to have health motives than meat abstainers, $\chi^2(2, N = 556) = 39.19, p = .000$.

Perhaps most importantly, the results also suggest that there are important impediments to being a devout CO. As predicted, COs were more likely to violate their diet and felt less ethically-associated guilt when doing so relative to vegetarians. COs violated their diet more in part because they believed it less necessary to always adhere to it. The reduced guilt that COs experienced from eating factory-farmed meat resulted from perceptions that it was difficult to follow their diet, that animals are less deserving of rights, and that meat is less disgusting. In fact, controlling for these three factors, participant diet had no effect on guilt following diet violations. While COs again displayed less ingroup identification, this factor did not account for differences in the number of violations or guilt from violations.

Objectively, difficulty following one's diet should be an inverse function of how many options are available. COs have more options than meat abstainers – they could abstain from meat or eat meat from selected sources – yet paradoxically, they report the greatest subjective difficulty adhering to dietary standards. The present findings support several explanations for the paradox of why COs find it more difficult to resist factory-farmed meat than vegetarians: one points to initial differences between COs and vegetarians whereas others imply that a CO diet actually causes infidelity because of practical or psychological reasons.

One reason for their greater disloyalty may be that COs are less committed from the beginning; they may not initially feel as strongly about issues related to animals as vegetarians do. Having relatively less affinity toward animals and evaluating animals less favorably may lead COs to eat factory-farmed meat more often and feel less guilty when doing so compared to vegetarians. This explanation is supported by earlier evidence that vegetarians shared more empathy toward animals (Rothgerber, 2014a), believed them to be more similar to humans in mental and emotional capacity (Rothgerber, 2014a), and by current evidence that vegetarians supported animal rights more than COs did, with this last factor mediating less guilt among COs. In addition, controlling for animal favorability, there were fewer differences between COs and vegetarians in their judgment of the acceptability of killing animals for food (Rothgerber, 2014a). Initial differences in beliefs about animals may then help explain why COs choose a diet that, by virtue of being less restrictive, requires less sacrifice than the diet of vegetarians.

Other explanations for greater dietary disloyalty among COs suggest that following a CO diet causes less adherence. This may be the result of potentially temporary structural factors or more stable factors inherent to cutting back on temptation as opposed to quitting it entirely. In the first case, COs expressed greater difficulty following their diet, and such expressions were positively correlated with the number of diet violations and mediated guilt over such violations. The confusion related to whether one is adhering to their diet is likely to be especially prevalent when they are served food by others, whether it be in a restaurant, catered event, or at a friend's house; it is unlikely that they can visibly distinguish between ethical and nonethical meat. But as Singer and Mason (2006) demonstrate, there is uncertainty even when the CO is choosing the meat product himself/herself. These difficulties may not be inherent to the diet, but may reflect that conscientious omnivorism is a new movement, not as supported and recognized by society yet. The fact that there is not even consensus regarding what this movement should be termed suggests that the diet has not been assimilated into American culture. The diet may be harder to follow in no small part because of unreliable or unclear food labeling in grocery stores and the lack of options in public settings; for example, many catered events and receptions offer clearly labeled vegetarian dishes, but less seem to provide dishes labeled "ethical meat."

A final possibility is that something about the nature of the CO diet itself makes it psychologically harder to follow. One explanation is that following a diet that includes animals may produce

dissonance pressures to hold unfavorable attitudes toward these animals. A host of studies have shown that animals that are consumed are psychologically distanced from humans relative to animals that are not consumed (e.g., Bilewicz, Imhoff, & Drogosz, 2011). Even more directly, Bastian, Loughnan, and colleagues have found that in a series of experiments, eating animals, expecting to eat them, and even being made to think about certain animals as categories of food led to greater perceived human–animal differences (Bastian et al., 2012; Bratanova, Loughnan, & Bastian, 2011; Loughnan, Haslam, & Bastian, 2010). Thus, less support for animal rights may be a consequence, not a cause, of following a CO diet relative to a vegetarian diet, and this resulting devaluation may promote additional episodes of cheating on one's diet. Indeed, in the present results, COs were lower than meat eaters in their support for animal rights, and such perceptions were correlated with the number of diet violations and mediated guilt associated with such violations. Because animal welfare is a credence attribute (Grunert et al., 2004), it also seems unlikely that COs can easily distinguish between the meat they consume and the meat they avoid. This may largely explain the present findings that COs were less likely to develop meat disgust than vegetarians. Lowered disgust in turn may account for reduced negative emotional reactions to diet violations, as demonstrated at present by meat disgust significantly mediating guilt that is associated with such violations. One explanation not supported by the results involves lower ingroup identification among COs that make violations of the CO diet less likely to trigger feelings that one has violated self-relevant standards and ingroup norms of meat abstinence. The problem is that while COs were lower in ingroup identification than vegetarians, the results failed to find that ingroup identification was related to reported diet violations.

The present findings are consistent with a model of dietary changes proposed by Phillips (1999). Using complex systems analysis, Phillips argued that while a small diet change may intuitively seem the best, it produces urges to retrogress. Using iso-utility contour maps, Phillips demonstrated why major changes are less prone to backsliding despite individuals' anticipation that they will be unpleasant. He noted that his analysis challenges common policy approaches relying on incremental change, which have proven fairly ineffective. If one's goal is to abstain from meat completely the present results provide partial evidence that it may be better to abstain from meat completely than adopt conscientious omnivorism.

Future research is needed to reaffirm this assertion and to further clarify the mechanisms involved. Perhaps the most puzzling aspect of the present findings was how few variables were related to the number of diet violations – only absolutism, difficulty following diet, and support for animal rights were correlated with behavior, and even these were not strong effects. The method of asking participants to reflect on past behavior and produce a best estimate of violations may not be the most reliable and may have inflated error variance. It is difficult to ascertain, then, whether several earlier explanations (i.e., meat disgust and ingroup identification) should be ruled out because they failed to account for behavior. These measures were related to guilt (with disgust mediating it), and it may be that a more precise measure of diet violations would have captured behavioral effects undetected at present.

It is also interesting that guilt over diet violations and number of diet violations were unrelated; on the surface, one would expect that feeling less guilty about violations would lead to increased incidents of violations. While seemingly unlikely, it is possible that guilt does not drive adherence to diet. For example, it may be that the accessibility and availability of desired diet alternatives play a larger role in diet maintenance than negative emotional reactions to violations. It is also possible that temptation overrides guilt, or that individuals do not properly judge and anticipate how much guilt they will experience from diet violations until after-the-fact.

It is important to further clarify these processes because conscientious omnivorism seems likely to grow in popularity regardless of whether individuals fully or partially adopt the practice. That is, the ethical meat movement seems compatible with trends in the U.S. and other western nations, indicating that individuals are not decreasing their appetite for meat but are expressing increasing concerns about factory farming. Researchers have largely lagged behind the public's interest in and consumption of ethical meat products. With a few exceptions, little is known about what motivates and influences ethical meat eaters and how they may differ from those choosing a more extreme response, vegetarianism (in the sense that vegetarians have less dietary options available to them). The present research has uncovered a tendency for COs to stray from their diet more frequently and to feel less ethically associated guilt when doing so. Whether this is the result of initial differences between the groups, temporary barriers to a newer movement, or more permanent psychological factors inherent to following a diet that may interfere with meat disgust and identification building, remains to be seen.

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