



Vegetarianism, depression, and the five factor model of personality

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ABSTRACT

This study investigated whether vegetarians and omnivores differ in their personality characteristics. We measured the five factor model of personality and depressive symptoms in vegetarians, who avoided meat and fish ($n = 276$); semi-vegetarians, who ate some meat and/or fish ($n = 1191$); and omnivores ($n = 4955$). Although vegetarians and semi-vegetarians were more open to new experiences, they were more neurotic and depressed than omnivores. Neither conscientiousness nor agreeableness varied as a function of dietary habits. These findings contribute to our understanding about differences between vegetarians' and omnivores' personalities, which might help us better understand individual differences in food preferences.

KEYWORDS

Depression; neuroticism; openness; personality; semi-vegetarian; vegetarian

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Introduction

Although food is necessary for survival and serves as a primary reinforcer, what people eat varies considerably across cultures and within cultures across people. One of the more prominent dimensions that is used to describe or classify diets is the extent to which people avoid meat, a tendency that is usually referred to as vegetarianism. Although vegetarians are usually described as those who avoid consuming meat, the degree to which people avoid animal products varies on a continuum (Barr and Chapman 2002; Haddad and Tanzman 2003; Janelle and Barr 1995). For example, vegans avoid all animal products and consume only foods derived from plants, whereas those who avoid red meat but consume fish and poultry are sometimes referred to as semi-vegetarians.

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Despite the fact that up to 1.5 billion people do not eat meat (Leahy, Lyons, and Tol 2010) little is known about differences between vegetarians and non-vegetarians in terms of their personalities—differences that might help explain individual differences in food choice and preferences. When examining relationships between personality and vegetarianism it is important to remember that the vast majority of the world's vegetarians are what Leahy et al. refer to as “vegetarians of necessity,” people who do not have enough money to buy meat.

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Moreover, when understanding relationships between personality and behavior, such a constraint is referred to as a “strong situation”—i.e., a situation that does not allow individual differences to emerge (e.g., Mischel 1973).

Relationships between vegetarianism and personality are more likely to emerge among individuals who are what Leahy, Lyons, and Tol (2010) referred to as “vegetarians of choice,” people who can afford to buy meat, but prefer not to eat meat. Leahy et al. estimated that there are 75 million such people, a number they expected to increase over time. In terms of understanding relationships between dietary preference and personality, having the wherewithal to buy meat would constitute what is called a “weak situation”—i.e., a situation that allows individual differences to emerge. Unless explicitly stated otherwise, when referring to differences between vegetarians and non-vegetarians, we will be discussing this within the context of societies in which people are vegetarians by choice.

The present study was designed to expand our understanding of dietary preference by examining relationships between vegetarianism and personality and how such relationships might vary between men and women. We studied these relationships in a sample of American university students who could be readily classified as having the economic means to buy meat, and so vegetarian tendencies would reflect vegetarianism of choice within the nomenclature suggested by Leahy, Lyons, and Tol (2010). For present purposes, we conceptualized personality in terms of the five factors of agreeableness, extraversion, conscientiousness, neuroticism, and openness to experience that constitute the Five Factor Model of personality (FFM), arguably the dominant model used in studies of personality. Also, given the interest in relationships between psychological well-being and vegetarianism we collected a measure of depressive symptoms.

The five factor model of personality

The five factors of the FFM are considered by many to be the “building blocks” of personality, the organizational foundation on which other individual differences are based. The FFM emerged from decades of research on models of personality, and the resulting factors are described below (John, Naumann, and Soto 2008).

- (1) Extraversion refers to the extent to which an individual is talkative and outgoing in social situations. It also includes positive emotions.
- (2) Agreeableness concerns the extent to which someone behaves pro-socially toward other people and wants to maintain pleasant, harmonious interpersonal relations.
- (3) Conscientiousness refers to an individual’s capacity to organize things, complete tasks, and work toward long-term goals.
- (4) Neuroticism refers to the extent to which someone experiences negative emotions and moods and swings in emotions. In some

measures of the FFM it is referred to by its opposite, Emotional Stability.

- (5) Openness concerns to the breadth and depth of individuals' intellectual, artistic, and experiential life. The full name of the factor is Openness to Experience.

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Previous research on personality and vegetarianism

Despite the prominence of vegetarianism in society, relationships between personality and the preference for a vegetarian diet have not received considerable attention, although some research has been done. Taken together, this research suggests that agreeableness and openness are the factors of the FFM that are positively related to the tendency to consume fruits and vegetables and are negatively related to meat consumption. (Forestell, Spaeth, and Kane 2012; Goldberg and Strycker 2002; Keller and Siegrist 2015; Pfeiler and Egloff 2018a). Pfeiler and Egloff (2018a, Study 2) also suggest that those who avoid meat may be more conscientiousness, though their findings are not consistent (see Pfeiller & Egloff, 2018b, Study 1).

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It has been suggested that altruism and sympathy, which are characteristic of agreeable people, may lead them to avoid consumption of animal products (Keller and Siegrist 2015). The openness factor explicitly concerns the extent to which people are open to new experiences, including food. Some research has found that food neophobia is negatively related to consumption of fruits and vegetables (Cooke et al. 2004; Coulthard and Blissett 2009). Given that the consumption of fruit and vegetables is a defining characteristic of vegetarianism, such results imply that vegetarians should be less food neophobic, and by extension, more open than omnivores. Such a possibility was confirmed by Forestell, Spaeth, and Kane (2012) who found that female vegetarians were less food neophobic and had higher scores on openness than female omnivores.

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Vegetarianism and psychological well-being

Although the reason why is not clear, it appears that vegetarianism is associated with poorer mental health. For example, studies conducted in Europe and Australia have reported that vegetarians were more likely to be depressed and anxious than semi-vegetarians who were more likely to be depressed and anxious than non-vegetarians (omnivores) (Baines, Powers, and Brown 2006; Burkert et al. 2014; Michalak, Zhang, and Jacobi 2012). Moreover, these differences held when samples were matched on demographic variables such as age and education (Michalak et al. 2012).

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Although depression is explicitly included in many measures of neuroticism (e.g., John, Donahue, and Kentle 1991; McCrae and Costa 2010) when it is measured as a factor rather than as a collection of more specific constructs

called facets, the specific role that depression plays in relationships between measures of the FFM and other constructs may not be clear. Given this and the previous research on vegetarianism and psychological well-being we analyzed relationships between vegetarianism and a measure of depression. 115

The present study: expectations and hypotheses

In the present study, we collected data from convenience samples of US undergraduates. Participants provided a measure of the FFM, and a measure of depressive symptoms, to test our two primary hypotheses: 120

- (1) We expected that vegetarians would have higher scores on the openness to experience factor of the FFM.
- (2) We expected that vegetarians would be more depressed than non-vegetarians and would have higher scores on the neuroticism factor of the FFM. Although the FFM was not designed to measure psychological well-being per se, neuroticism is often considered to be a measure of well-being, and it is sometimes referred to as emotional instability. 125

Given the lack of relevant theory and the inconsistency of the limited research available, we examined differences between vegetarians and non-vegetarians in terms of agreeableness, extraversion, and conscientiousness on an exploratory basis. Although it has been argued that masculine identity is entangled with eating meat (e.g., Rozin, Hormes, Faith, and Wansink 2012; Ruby 2012), the lack of research on relationships between personality and vegetarianism led us to examine the joint effects of gender and the FFM on a speculative basis. 130

Method

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Participants

Participants were 6450 students in introductory psychology classes who completed the study in partial fulfillment of a course requirement. Participants provided informed consent, and the study protocol was approved by the university Institutional Review Board. 140

Measures and procedure

Participants provided data using a secure, on-line data collection system. In addition to demographic characteristics (gender, age, and race) participants described their dietary habits using the General Eating Habits Scale (Forestell, Spaeth, and Kane 2012), and they completed the Big Five Inventory (BFI-44) (John, Donahue, and Kentle 1991), a measure of the FFM, and the Center for 145

Epidemiologic Studies Depression (CESD) (Radloff 1977), a measure of depressive symptoms.

General Eating Habits (GEH)

Participants indicated which of the following seven categories best characterized their eating behavior: 150

Vegan: a person who eats fruits, vegetables, and grains but no animal or seafood products;

Lacto-vegetarian: a person who eats fruits, vegetables, grains, and dairy products, but no other animal or seafood products; 155

Lacto-ovo-vegetarian: a person who eats fruits, vegetables, grains, dairy products, and eggs, but no other animal or seafood products;

Pesco-vegetarian: a person who eats fruits, vegetables, grains, dairy products, eggs, and seafood, but no other animal products;

Semi-vegetarian: a person who eats fruits, vegetables, grains, dairy products, eggs, seafood, and chicken but no red meat; 160

Occasional omnivore: a person who occasionally eats red meat, white meat, seafood, eggs, dairy products, fruits, vegetables, and grains;

Omnivore: a person who regularly eats most meats, seafood, eggs, dairy products, fruits, vegetables, and grains. 165

Big Five Personality Inventory

The BFI-44 measures the five factors of the FFM; extraversion, agreeableness, conscientiousness, openness, and neuroticism. Participants responded to each of the 44 questions on the BFI-44 using the standard 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). Scores were mean responses to the items constituting each scale. 170

Center for Epidemiologic Studies Depression

The 20-item CESD scale was designed to assess depression in the general population. The CESD uses a 4-point scale ranging from 0 (rarely or none of the time) to 3 (most or all of the time). Scores on the CESD were defined as the sum of responses to all items. 175

Results

Participant characteristics

Of the 6450 participants, 6422 (3707 women) completed the BFI-44. On average, participants were 18.96 years old ($SD = 1.39$, range 16–47) and 67.7% identified as 180

White, 8.1% as Black, 11.7% as Asian, and 12.6% as other. These participants were divided into three groups based on their responses to the GEH questions. The first group (labeled vegetarians; $n = 276$; 204 women) included people who indicated that they restrict all meat and fish from their diets (vegans, $n = 44$; lacto-vegetarians, $n = 38$; and lacto-ovo vegetarians, $n = 194$). The second group (labeled semi-vegetarians, $n = 1191$; 965 women) included people who eat fish or white meat or red meat occasionally (pesco-vegetarians, $n = 153$; semi-vegetarians, $n = 158$; occasional omnivores, $n = 880$). The third group (labeled omnivores; $n = 4955$; 2538 women) included people who regularly eat fish and/or meat.

A chi-squared analysis found that vegetarians were much less likely to be men than women (26.1% vs. 73.9%) and that semi-vegetarians were also much less likely to be men than women (19.0% vs. 81.0%), overall $\chi^2(2) = 380.5$, $p < .001$. These subgroups did not differ on any of the other demographic variables measured. Of the 6422 participants, 5446 completed the CESD. The raw data described in this study are available at: <https://osf.io/nk5pz/>

Descriptive statistics

To provide a context for understanding the present results, descriptive statistics for our measures (means, *SEs*, and reliabilities) and correlations between the factors measured by the BFI-44 and the CESD are presented in Table 1. These statistics are similar to those reported in previous research (Crawford et al. 2011; Digman 1997).

Differences in the FFM and CESD as a function of dietary preference

We examined differences in the FFM and depression as a function of dietary preference and gender using a series of 2 (gender) x 3 (GEH group) analyses of variance (ANOVA), with each of the five personality dimensions and CESD as dependent variables. The means from these analyses are presented in Table 2 and Figure 1. Follow-up tests involving pairs of means were done using Tukey's HSD. Although main effects of gender were not a focus of this study we report them for the sake of thoroughness.

Five factor model

As expected, the analyses found a significant main effect of GEH for openness $F(2, 6415) = 14.49$, $p < .001$, $\eta^2 = .004$. Follow-up analyses found that

Table 1. Descriptive statistics and correlations between measures.

	<i>M</i>	<i>SE</i>	α	E	O	N	A	C
CESD	14.7	9.65	.89	-.21	-.01	.52	-.25	-.28
Extraversion	3.28	0.84	.88		.15	-.27	.15	.15
Openness	3.61	0.62	.80			-.03	.12	.02
Neuroticism	2.87	0.77	.83				-.27	-.17
Agreeableness	3.76	0.62	.79					.27
Conscientiousness	3.53	0.67	.83					

Table 2. Means (SE) for BFI-44 and the CESD as a function of gender and dietary habit.

Scale		Vegetarians (n = 278)	Semi-vegetarians (n = 1197)	Omnivores (n = 4973)
Openness	Total	3.81 (0.04) ^{a,b}	3.65 (0.02) ^b	3.59 (0.01)
	Women	3.80 (0.04)	3.65 (0.02)	3.57 (0.01)
	Men	3.82 (0.07)	3.65 (0.04)	3.61 (0.01)
Extraversion	Total	3.18 (0.06)	3.23 (0.03)	3.28 (0.01)
	Women ^c	3.34 (0.06)	3.32 (0.03)	3.33 (0.02)
	Men	3.02 (0.10)	3.14 (0.06)	3.24 (0.02)
Neuroticism	Total	2.98 (0.05) ^b	2.95 (0.03) ^b	2.82 (0.01)
	Women ^c	3.08 (0.05)	3.06 (0.02)	3.00 (0.02)
	Men	2.89 (0.09) ^b	2.85 (0.05) ^b	2.63 (0.02)
Agreeableness	Total	3.72 (0.04)	3.75 (0.02)	3.75 (0.01)
	Women ^c	3.80 (0.04)	3.83 (0.02)	3.82 (0.01)
	Men	3.64 (0.07)	3.67 (0.04)	3.68 (0.01)
Conscientiousness	Total	3.51 (0.05)	3.50 (0.02)	3.52 (0.01)
	Women ^c	3.61 (0.05)	3.60 (0.02)	3.61 (0.01)
	Men	3.41 (0.08)	3.39 (0.04)	3.44 (0.01)
CESD	Total	17.63 (0.71) ^b	15.82 (0.38) ^b	14.23 (0.15)
	Women	16.36 (0.76)	15.77 (0.33) ^b	14.82 (0.21)
	Men	18.91 (1.20) ^b	15.88 (0.69) ^b	13.63 (0.21)

^aSignificantly greater than semi-vegetarians

^bSignificantly greater than omnivores

^cSignificantly greater than men

vegetarians were more open than semi-vegetarians ($p = .001$) who in turn were more open than omnivores ($p = .001$). The main effect for gender and the gender by GEH interaction were not significant ($ps > .48$). 215

For extraversion, there was a main effect of gender, $F(1, 6416) = 19.84$, $p < .001$, $\eta^2 = .003$, such that women ($M = 3.33$, $SE = 0.02$) were more extraverted than men ($M = 3.13$, $SE = 0.04$). Although the gender x GEH interaction was not significant, $F(2, 6416) = 2.76$, $p = .063$, simple main effects analyses revealed that extraversion differed as a function of GEH for men, $F(2, 2712) = 3.66$, $p = .026$, whereas there was no effect of GEH for women. Follow-up analyses found that vegetarian men were not significantly less extraverted than omnivorous men ($p = .073$, and there were no significant differences between semi-vegetarian and vegetarian men ($p = .54$) or between semi-vegetarian and omnivorous men ($p = .21$). 220
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For neuroticism, there was a main effect of gender, $F(1, 6414) = 43.10$, $p < .001$, $\eta^2 = .007$, such that women ($M = 3.05$, $SE = 0.02$) were more neurotic than men ($M = 2.79$, $SE = 0.03$). As expected, there was also a significant main effect for GEH, $F(2, 6414) = 15.10$, $p < .001$, $\eta^2 = .005$, such that omnivores were less neurotic than vegetarians ($p < .001$) and semi-vegetarians ($p < .001$). Whereas vegetarians and semi-vegetarians did not differ ($p = .98$). Both of these main effects were qualified by a significant gender x GEH interaction, $F(1, 6414) = 4.76$, $p = .009$, $\eta^2 = .001$. Simple main effects analyses found that for men the GEH effect was significant, $F(2, 2711) = 12.41$, $p < .001$, whereas for women the effect of GEH was not significant, $F(2, 3703) = 2.85$, $p = .058$). Follow-up analyses indicated that vegetarian and semi-vegetarian men were more neurotic than omnivorous men ($p = .011$ 230
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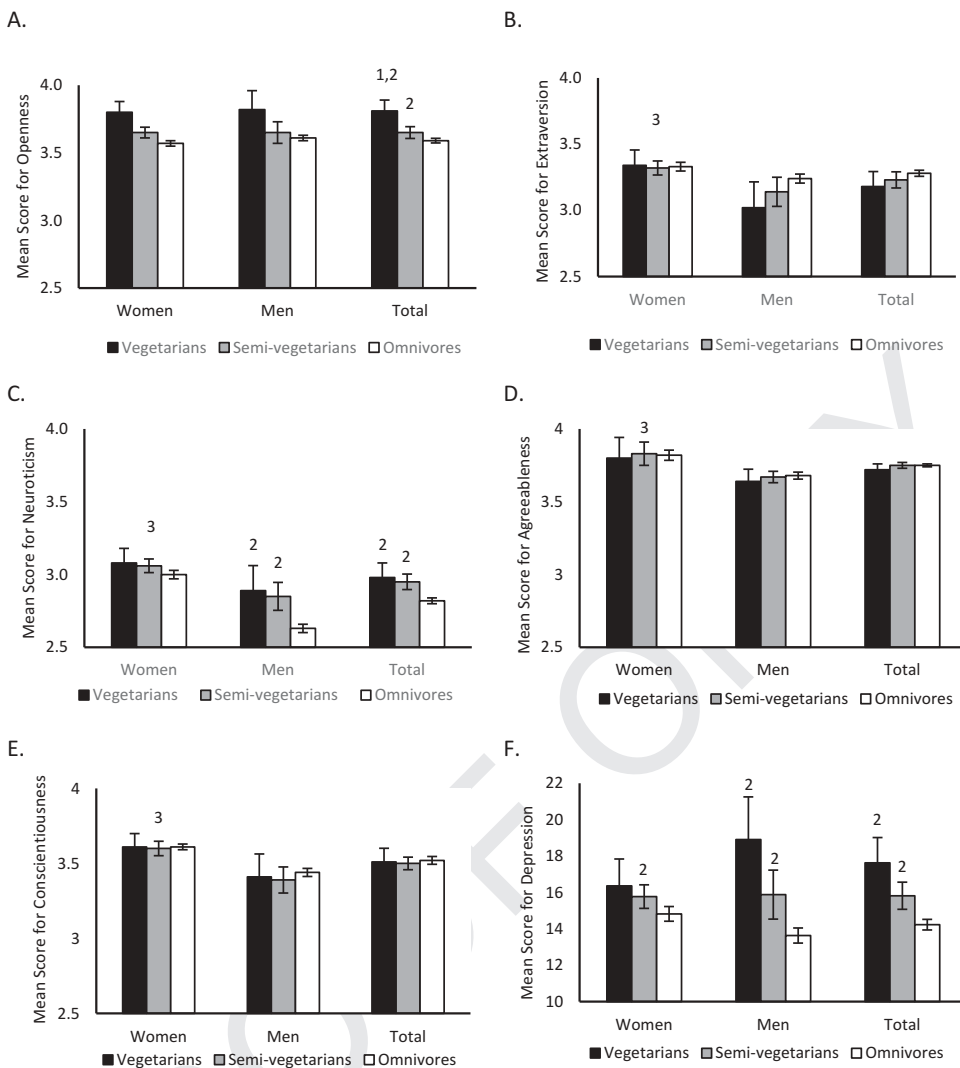


Figure 1. Mean openness (panel A), extraversion (panel B), neuroticism (panel C), Agreeableness (panel D), Conscientiousness (panel E), and Depression (panel F) for Vegetarian (black bars), Semi-vegetarian (grey bars), and Omnivore (white bars) women and men. Error bars represent 95% confidence intervals. As in Table 2, the label 1 represents significantly higher scores than semi-vegetarians, label 2 represents significantly higher scores than omnivores, and label 3 indicates that women's scores are significantly higher than men.

and $p < 0.001$, respectively), whereas vegetarian and semi-vegetarian men did not differ significantly ($p = 0.92$).

Only main effects of gender were found for agreeableness, $F(1, 6415) = 24.13$, $p < .001$, $\eta^2 = .005$, and conscientiousness, $F(1, 6414) = 29.17$, $p < 0.001$, $\eta^2 = .005$, such that women were more agreeable ($M = 3.82$, $SE = 0.02$ vs. $M = 3.66$, $SE = 0.03$) and conscientious ($M = 3.60$, $SE = 0.02$ vs. $M = 3.41$, $SE = 0.03$) when compared to men.

Depression

This analysis produced a significant effect for GEH, $F(2, 5440) = 17.51$, $p < .001$, $\eta^2 = .006$. Follow-up tests indicated that vegetarians and semi-vegetarians were more depressed than omnivores ($ps < .001$), and the means for vegetarians and semi-vegetarians did not differ from each other ($p = .155$). This main effect was qualified by a significant gender x GEH interaction, $F(2, 5440) = 4.33$, $p = .013$, $\eta^2 = .002$. Follow-up analyses found a significant effect of GEH for women, $F(2, 3150) = 4.08$, $p = .017$, such that semi-vegetarians were significantly more depressed than omnivores ($p < .047$), however vegetarians did not differ from either semi-vegetarians ($p = .765$) or omnivores ($p = .136$). There was also a significant effect of GEH for men, $F(2, 2290) = 14.83$, $p < .001$. Omnivores were significantly less depressed than male vegetarians ($p < .001$) and semi-vegetarians ($p = .003$), but vegetarians did not differ from semi-vegetarians ($p = .058$).

Discussion

This study explored the relationship among personality, depression, and dietary habits in a large sample of American college students who varied in the degree to which they restricted meat from their diet. We found that openness, extraversion, neuroticism, and depression differed as a function of vegetarian eating style. Moreover, some of these differences varied somewhat between men and women.

Consistent with our first hypothesis, vegetarians were more open to new experiences than semi-vegetarians, who were in turn more open than omnivores. Previous work has found that openness is negatively related to food neophobia in women (Knaapila et al. 2011). This finding is not surprising given the theoretical overlap between openness to new experiences and food neophobia. In fact, secondary analyses of data reported in Forestell, Spaeth, and Kane (2012) indicated that while the association between vegetarianism and openness remained significant after controlling for neophobia, the association between vegetarianism and neophobia was no longer significant when controlling for openness. This suggests that differences in openness among individuals with different dietary habits underlie differences in food neophobia rather than the reverse.

Consistent with our second hypothesis, vegetarians and semi-vegetarians were more neurotic and depressed than omnivores. These findings contribute to a growing body of evidence that vegetarians' psychological and emotional well-being may be lower than that of omnivores (Baines et al. 2007; Burkert et al. 2014; Michalak, Zhang, and Jacobi 2011). Some of this may reflect the fact that being a vegetarian makes one a member of a minority in Western societies, which is often associated with reduced well-being. It is also possible that vegetarian diets do not play a causal role in the etiology of mental health problems. Michalak and colleagues have shown that

psychological disorders typically precede the adoption of vegetarianism. Thus, it is possible that depressed individuals try to improve their well-being by adopting vegetarian dietary habits. 285

Consistent with such a possibility, some research suggests that adopting a vegetarian diet may increase well-being (Agarwal et al. 2015; Katcher et al. 2010). Indeed, vegetarian diets, which are rich in nutrients such as B6, folate (Majchrzak et al. 2006), and antioxidants (Szeto, Kwok, and Benzie 2004), may reduce symptoms in depressed individuals. Understanding the causal relationships between vegetarian eating habits and psychological well-being requires more research designed to examine such relationships. 290

Gender differences

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Our results suggested that differences in neuroticism and depression as a function of dietary habit varied between men and women. For men, the differences were characterized well by the main effects for neuroticism and depression reported above: omnivores were best adjusted. In contrast, while women's dietary habits were not reliably associated with neuroticism, semi-vegetarians were significantly more depressed than omnivores. These findings are consistent with previous research showing that female semi-vegetarians, but not vegetarians, are more likely to be restrained eaters than omnivores (Forestell, Spaeth, and Kane 2012; Timko, Hormes, and Chubski 2012). Restrained eating refers to cognitively based attempts to restrict weight gain and is positively related to depression (Heaven et al. 2001). 300 305

When considering gender differences in psychological characteristics that involve avoidance of meat it is important to keep in mind that, at least in Western societies, eating meat is associated with masculinity (e.g., Rozin et al. 2012; Ruby and Heine 2011). Similar to the differences found in other studies (e.g., Pfeiler and Egloff 2018a, 2018b), women in the present study were more likely than men to avoid eating meat, suggesting that meat avoidance is less normative for men than it is for women. It is possible that being in the minority in terms of a characteristic associated with masculinity is more stressful for men than it is for women. 310 315

Personality and motives for adopting a vegetarian diet

We examined relationships between the FFM and dietary habit to better understand the motives underlying the choice of dietary habits. Previous research has shown that conscientiousness is associated with healthful eating (Raynor and Levine 2009) and agreeableness is associated with vegetarianism (Pfeiler and Egloff 2018a, 2018b). Given that vegetarian diets are considered to have more health benefits when compared with effects of a more typical Western diet (Fraser 2009), vegetarians may be more conscientious than omnivores. Vegetarians may 320

also be more agreeable than omnivores if they are high in altruism and thus have a greater tendency toward ethical concerns for animals (Keller and Siegrist 2015). We did not find such differences in our study, perhaps because we were not able to distinguish vegetarians whose food choices were motivated by health from those who are motivated by their concerns about animal welfare or ethics. We know of no research that suggests that ethical vegetarians are more conscientious, or that health vegetarians are more agreeable than others. If our groups of vegetarians contained both ethical and health vegetarians, the mean conscientiousness and agreeableness scores may have been lower than if they had been comprised of only health and ethical vegetarians, respectively. Examining such a possibility will require studies that determine whether people's motives for being a vegetarian involve concerns related to health or ethics.

Limitations and future directions

Although the sample we studied was large, it consisted of young American college students from a narrow demographic background, thus the generalizability of the results of this study are limited. As discussed above, future work should measure additional constructs of interest such as participants' reasons and motivations for their dietary habits. This would provide a basis to distinguish vegetarians who have adopted their dietary habits as a function of strong situational influences such as religious prohibitions that limit their personal choice and those whose dietary habits have been formed within the context of weak situations in which individual differences such as personality can determine dietary choice. We expect that associations between personality and dietary habits would be stronger in the latter group than in the former.

There is also the issue of effect sizes. The raw effect sizes in the study were small, in many cases 1% or less of the total explained variance. Nevertheless, these effect sizes need to be evaluated in terms of the fact that unequal sample sizes reduce the efficiency of a design to estimate effect sizes, and this reduction is a direct function of the differences in the sizes of the sample involved (Rosnow, Rosenthal, and Rubin 2000). For designs in which there are more than two groups, the estimate of this reduction depends upon the specific contrast involved (e.g., which groups are being contrasted) making it difficult to provide a simple summary. For example, for a *t*-test comparing only the vegetarian and omnivore samples the estimated efficiency would be .71. Even assuming that the present analyses underestimated the effect sizes of the differences among our groups, the likely "true" effect sizes are probably small, perhaps less than 5%. Although such small effects can be meaningful in terms of their predictive power (Rosenthal and Rubin 1979), they may be small in contrast to the effects researchers may consider to be meaningful.

Nevertheless, such effects need to be considered in light of a few possibilities. Unmeasured variables such as body mass index may be related to people's

choices about the role of meat in their diets and controlling for them could change the effect sizes associated with personality differences in dietary choice. Or, there may be moderating relationships such that relationships between dietary choice and personality vary as a function of a third variable, such as relationships that varied as a function of sex in the present study. We hope that the present results have suggested some directions for future research. 365


Finally, there is the issue of causality. The cross-sectional nature of our data did not provide a basis for drawing inferences about causal relationships between dietary habits and personality. Although the general sense among personologists is that the factors of the FFM are broad and serve as the building blocks upon which more specific constructs such as dietary choice are based, it is possible that adopting a certain diet changes one's personality, the reverse causal sequence. It may also be that change is reciprocal. Answering such questions will require studies explicitly designed for the purpose. 370 375

Conclusions

The present findings provide a better understanding of the personality characteristics of vegetarians and semi-vegetarians. Consistent with previous research, our results suggest that although vegetarians may be more open to new experiences than non-vegetarians, they are more likely to suffer from neuroticism and depression than omnivores. More research is needed in order to better understand the interplay between personality characteristics, gender, and vegetarianism. 380 385

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