On the moralization of vegetarianism and differences between health and moral vegetarians: Registered Report replicating and extending Rozin et al. (1997)

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**Authorship declaration:**

Esther Hiu Lam Chan, Wing Tung Yau, Wing Yan Ng, Tsz Wah Chim, and Wing Yeung designed the study, developed the experimental materials for each study respectively, and wrote an initial draft of the Registered Report Stage 1. Utek Leong revised the designs and experimental materials, wrote the analysis scripts, conducted the data analyses, and drafted the manuscript for submission. Katy Y. Y. Tam provided feedback and guidance in the initial stages. Gilad Feldman guided the replication efforts, supervised each step in the project, ran data collection, conducted the pre-registration, and edited the manuscripts for submission.

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**CRediT - Contributor Roles Taxonomy**

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| Writing-review and editing | ✓ |  |  | ✓ |

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# PCIRR-Study Design Table

| **Question** | **Hypothesis** | **Sampling plan** | **Analysis plan** | **Rationale for test sensitivity** | **Interpretation given different outcomes** | **Implications for Theory** |
| --- | --- | --- | --- | --- | --- | --- |
| Do moral and health vegetarians differ in their reasons for being vegetarian, their attitudes towards vegetarianism and eating meat, and their emotional reactions towards eating meat? | Moral-origin vegetarians indicate more reasons for being a vegetarian than health-origin vegetarians | We conducted a priori power analysis using the safeguard power approach. To maximize our chances of recruiting sufficient moral-origin vegetarians and health-origin vegetarians, we enlarged this recommended sample size to obtain our target final sample size of 830. | One-sided Welch’s *t*-test | Lower bound of the 60% CI of the original effect sizes (computed from the original *t*-tests) as conservative estimates (Perugini et al., 2014) | If we fail to find support for this hypothesis, it could suggest the following: (1) the method of determining who is a moral-origin vegetarian and who is a health-origin vegetarian is incorrect/not meaningful, (2) the process of moralization is not responsible for the purported attitudinal differences between moral and health vegetarians, (3) the measures used are invalid, and/or (4) there is insufficient power (i.e., the sample size used here is too small) to detect said differences between moral and health vegetarians. | The process of moralization (Rozin, 1999) |
| Moral-origin vegetarians indicate more reasons for being a vegetarian that are neither moral nor health reasons than health-origin vegetarians |
| Moral-origin vegetarians reject the consumption of a wider range of animal meats/products than health-origin vegetarians |
|  | Moral-origin vegetarians indicate stronger disgust toward meat than health-origin vegetarians |
|  | Moral-origin vegetarians have more emotional reactions to the eating of meat than health-origin vegetarians |
| Moral-origin vegetarians have more personality-related reasons for being a vegetarian than health-origin vegetarians |
| Moral-origin vegetarians are more likely to have negative reactions to the taste, smell, texture, or appearance of meat than health vegetarians |  |  |  |  |

# Abstract

[IMPORTANT: Abstract, method, and results were written using a randomized dataset produced by Qualtrics to simulate what these sections will look like after data collection. These will be updated following the data collection. For the purpose of the simulation, we wrote things in past tense, but no pre-registration or data collection took place yet.]

Moralization is the process by which morally neutral objects/activities acquire moral qualities. Rozin et al. (1997) proposed that moralization is responsible for the purported attitudinal differences between moral vegetarians and health vegetarians and therefore sought to explore the differences between moral- and health-origin vegetarians to study the consequences of moralization. In a Registered Report with a US American Prolific online sample (*N* = 830), we conducted a replication of the study described in Rozin et al. (1997). [The following findings are concluded from simulated random noise and will be updated after data collection.] We failed to find empirical support for differences between moral- and health-origin vegetarians on overall reasons for being a vegetarian (*ds*\* = 0.07, 90% CI [-0.16, 0.29]), reasons for being a vegetarian that are neither moral nor health reasons (*ds*\* = -0.11, 90% CI [-0.33, 0.12]), the range of animal meat/products rejected (*ds*\* = -0.20, 90% CI [-0.42, 0.02]), disgust towards meat (*ds*\* = -0.10, 90% CI [-0.31, 0.12]), emotional reactions to eating meat (*ds*\* = -0.05, 90% CI [-0.17, 0.27]), personality-related reasons for vegetarianism (*ds*\* = -0.02, 90% CI [-0.24, 0.20]), and sensory reactions towards meat (*ds*\* = 0.12, 90% CI [-0.11, 0.34]). Overall, we conclude that we failed to successfully replicate and extend the findings by Rozin et al. (1997). Materials, data, and code are available on: <https://osf.io/5azdg/>.

*Keywords:* Moralization, morality, health, replication, registered report, vegetarians, vegetarianism, disgust, attitudes, eating meat

# On the moralization of vegetarianism and differences between health and moral vegetarians: Registered Report replicating and extending Rozin et al. (1997)

[IMPORTANT: Section is written in the past tense to simulate what the manuscript will look like after data collection, yet no pre-registration or data collection took place yet.]

## Background

Broadly speaking, vegetarians are individuals who abstain from the consumption of some or all forms of animal meat and products/by-products (Vinnari et al., 2009). While adherents of different vegetarian diets may abstain from different food groups, vegetarians ultimately do share an avoidance of animal-derived foods. This shared avoidance of meat and animal products, however, should not be mistaken for shared motivations for vegetarianism. Vegetarians can have vastly different reasons (be it initial or current) for adopting and adhering to a vegetarian diet.

Researchers have often distinguished between two types of vegetarians (Antonovici & Turliuc, 2020; Dai & Leung, 2024; Fox & Ward, 2008; Hamilton, 2006; Jabs et al., 1998; Rothgerber, 2014) that can be distinguished by their motivations for adopting a vegetarian diet: health vegetarians and moral vegetarians. Health vegetarians are individuals who adopt a vegetarian diet because of personal health reasons and a desire to avoid illness. Moral vegetarians, on the other hand, practice vegetarianism due to moral considerations regarding the welfare of animals (Fox & Ward, 2008; Jabs et al., 1998). Beyond the obvious differences in underlying motivations, health and moral vegetarians seem to also differ in their attitudes (Rothgerber, 2017), particularly their attitudes towards meat. Several studies found evidence for moral vegetarians feeling more disgusted by meat than health vegetarians (Hamilton, 2006; Rothgerber, 2014; Rozin et al., 1997).

In a seminal article, Rozin et al. (1997) proposed that these attitudinal differences between moral and health vegetarians could be a sign that meat avoidance has become a moralized behavior via the process of moralization. According to Rozin and colleagues (Rozin, 1999; Rozin et al., 1997), moralization is the process whereby morally neutral objects/activities acquire moral qualities. By acting on both the individual and culture at large, moralization is thought to shape attitudes and emotional reactions by transforming preferences, such as the preference for not eating meat or smoking, into deep seated values – values that are internalized and “tend to invoke strong moral emotions, such as anger, contempt, disgust, guilt, and shame”, especially when violated (Rozin et al., 1997, p.67).

In this article, the authors sought to investigate the consequences of moralization in vegetarianism by studying the differences between moral- and health-origin vegetarians on a set of attitudes and emotional reactions. They reasoned that if meat avoidance has indeed become a moralized issue for moral vegetarians then they would tend to display stronger attitudes, emotional reactions towards meat, and more dislike of the sensory qualities of meat compared to health vegetarians for whom meat avoidance has ostensibly not been moralized. Further, they argue that moral vegetarians, particularly those who have been moral vegetarians for a long time, are likely to give more reasons for meat avoidance than health vegetarians, because selective information processing (driven by initial moral reasons for avoiding meat) is likely to lead to an accretion of motives.

Given its impact in laying the foundations for future research on moralization and given that it was the first study to quantitatively investigate the consequences of moralization in the context of vegetarianism, we embarked on a close replication of Rozin et al. (1997). We begin by providing our motivations for the replication and a summary of the target article and then proceed to describe our replication design.

## 

Rozin et al. (1997) has been influential. The article has been cited 731 times according to Google Scholar (at the time of writing: October 2024). We believe that Makel et al.’s (2012) note arguing “if a publication is cited 100 times, we think it would be strange if no attempt at replication had been conducted and published” captures the importance of revisiting such impactful findings (Chandrashekar & Feldman, 2025; Feldman, 2025), which – to the best of our knowledge (given our non-systematic search for replications in citing articles) – were never followed on with an independent close replication.

Beyond the academic attention it received as measured by citation count, the findings of Rozin et al. (1997) are also important because they served as foundational empirical evidence for the consequences of moralization in Rozin’s (1999) subsequent treatise on the process of moralization. Rozin (1999) provided the first exposition of the process of moralization, laying out one of the most widely used definitions of moralization to date (Rhee et al., 2019). Therefore, by providing empirical support for the consequences of moralization, Rozin et al. (1997) effectively laid the groundwork for many important follow-up empirical studies that explicated the role of moralization in a myriad of domains including but not limited to health behaviors (Pratt et al., 2024), COVID-19 reduction (Graso et al., 2021), intrinsic motivation at work (Kwon et al., 2023; Kwon & Sonday, 2024), and health products/medications (Lalumera, 2023).

As the first study to examine the consequences of moralization in vegetarianism, Rozin et al. (1997) also sparked increased research interest in the purported consequences of moralization in vegetarians, particularly in the emotion of disgust. Fessler et al. (2003), for example, sought to extend upon the findings of Rozin et al. (1997) by investigating if disgust was a consequence or cause of the moralization of vegetarianism. Similarly, Rothgerber (2014) sought to examine the differences between strict vegetarians and semi-vegetarians on an array of attitudes toward meat and animals (including disgust). More recently, Ioannidou et al. (2023) examined differences in moral emotions (disgust and guilt) and beliefs between omnivores, pescatarians, vegetarians, and vegans.

Rozin et al. (1997) has also indirectly led to further efforts to understand the process of moralization in the context of vegetarianism and meat eating. Feinberg and colleagues (2019), for example, proposed a model of the moralization process they termed the Push-Pull Moralization Model (PPMM) that explicates how moral emotions and cognitions “push” individuals to moralize whereas hedonic motivations and dissonance reduction strategies have the opposite effect of “pulling” individuals to not moralize. Testing this model in the context of meat eating using three longitudinal studies, the authors found evidence to support the notion that moral emotions and engaging in moral piggybacking (associating eating meat with one’s existing moral principles) served as “push” factors for the moralization of meat eating.

We therefore embarked on a Replication Registered Report of Rozin et al. (1997). We aimed to revisit Rozin et al. (1997) to examine the reproducibility and replicability[[1]](#footnote-2) of their seminal findings associated with its seven original hypotheses (see Table 1) by adhering to the original methodology as closely as possible, in an independent pre-registered well-powered close replication. More specifically, we aimed to investigate if we can (i) directly replicate the findings that the original study found support for (Hypothesis 1, 2, 4, 5, and 6) and (ii) if, with a larger sample size, we can find support for the hypotheses that were not supported in the original study (Hypothesis 3 and 7). This follows the recent growing recognition of the importance of reproducibility and replicability in psychological science (e.g., Nosek et al., 2022; Zwaan et al., 2018) and of the use of Registered Reports in improving rigor and quality and in combating review and publication biases (Chambers & Tzavella, 2022; Soderberg et al., 2021).

## Rozin et al. (1997): Summary of hypotheses and findings

We provided a summary of Rozin et al. (1997)’s research questions and hypotheses in Table 1 and a summary of their statistical tests in Table 2 and Table 3[[2]](#footnote-3). In the target article, the authors recruited 119 participants for their study, of which 36 were classified as moral-origin vegetarians and 26 were classified as health-origin vegetarians. A sensitivity power analysis using these reported values (assuming alpha = .05 and 80% power) suggests that the original study had 80% power to detect effects as small as *d*s = 0.65 (which according to some benchmarks can be regarded as a large effect in social psychology; Jané et al., 2024).

Using data collected from these moral-origin and health-origin vegetarians, the authors argued to have found support for six out of their seven hypotheses (Hypotheses 1, 2, 3, 4, 5, and 6). While analyzing the target article for this replication attempt, we noticed that the degrees of freedom (df) for all the t-tests except the t-test associated with Hypothesis 4 (see the “Power Analysis” section of the supplementary material for more details) reported in the target article were discrepant from the df values that are to be expected. Therefore, we recomputed the t-tests using the summary statistics reported in the target article and reported

Table 1  
*Rozin et al. (1997): Summary of research questions and hypotheses*

|  |  |
| --- | --- |
| Research Question: Do moral and health vegetarians differ in their reasons for being vegetarian, their attitudes towards vegetarianism and eating meat, and their emotional reactions towards eating meat? | |
| Hypothesis | Description |
| 1 | Moral-origin vegetarians indicate more reasons for being a vegetarian than health-origin vegetarians |
| 2 | Moral-origin vegetarians indicate more reasons for being a vegetarian that are neither moral nor health reasons than health-origin vegetarians |
| 3 | Moral-origin vegetarians reject a wider range of animal foods than health-origin vegetarians |
| 4 | Moral-origin vegetarians indicate stronger disgust toward meat than health-origin vegetarians |
| 5 | Moral-origin vegetarians have more emotional reactions to the eating of meat than health-origin vegetarians |
| 6 | Moral-origin vegetarians have more personality-related reasons for being a vegetarian than health-origin vegetarians |
| 7 | Moral-origin vegetarians are more likely to have negative reactions to the taste, smell, texture, or appearance of meat than health vegetarians |

Table 2*Rozin et al. (1997): Summary of t-tests*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| H# | Dependent variable | *t* | df | *p* | Cohen’s *ds* | Cohen’s *ds*\* |
| 1 | Overall reasons | 3.13 | 60 | <.001 | 0.80 [0.28, 1.33] | 0.80 [0.26, 1.32] |
| 2 | Non-moral, non-ecological, and non-health reasons | 2.35 | 60 | .02 | 0.60 [0.09, 1.12] | 0.60 [0.08, 1.12] |
| 3 | Range of animal products rejected | 1.99 | 60 | .05 | 0.51 [0, 1.02] | 0.55 [0.06, 1.03] |
| 4 | Overall disgust | 3.50 | 57 | <.001 | 0.92 [0.38, 1.46] | 0.92 [0.38, 1.46] |
| 6 | Personality reasons | 3.42 | 57 | <.001 | 0.90 [0.36, 1.43] | 0.88 [0.33, 1.43] |
| 7 | Overall sensory score | -1.03 | 57 | .30 | -0.27 [-0.79, 0.24] | -0.27 [-0.79, 0.24] |

*Note*. *t* values, df values, and *p* values presented here are recalculated from the summary statistics reported in the target article: the corresponding t-test for each dependent variable was recomputed using the summary statistics (mean difference between moral-origin vegetarians and health-origin vegetarians for each dependent variable and the sample size reported for each group) reported in the target article.   
Effect sizes and their confidence intervals (lower and upper bounds reported in square brackets below each effect size estimate) were not reported in the target article and were thus calculated from the recomputed t-tests.   
\*Effect sizes presented here were calculated from the sample size, mean values, and standard deviations reported in the target article using the deffsize Shiny app (<https://effectsize.shinyapps.io/deffsize/>).

Table 3*Rozin et al. (1997): Summary of correlational analyses*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Hypothesis | Variable | Moral | Health | Moral with health partialled out |
| 4 | Nausea | .30\*\* [.11, .48] | .36\*\*\* [.17, .52] | .18 |
| Contamination | -.55\*\*\* [-.68, -.39] | -.25\* [-.43, -.05] | -.51\*\*\* |
| Elicitation of disgust | .64\*\*\* [.50, .75] | .51\*\*\* [.34, .65] | .55\*\*\* |
| Overall disgust | .61\*\*\* [.47, .72] | .48\*\*\* [.31, .62] | .52\*\*\* |
| 5 | Emotional reactions to eating meat | .81\*\*\* [.73, .87] | .30\*\* [.11, .47] | .79\*\*\* |
| 6 | Personality reasons | .77\*\*\* [.67, .84] | .43\*\*\* [.25, .58] | .72\*\*\* |
| 7 | Taste of meat | -.10 [-.30, 0.10] | -.30\*\* [-.47, -.11] | -.02 |
| Smell of meat | -.42\*\*\* [-.57, -.24] | -.33\*\*\* [-.50, -.14] | -.33\*\*\* |
| Texture of meat | -.08 [-.08, -.28] | -.16 [-.35, .04] | -.02 |
| Appearance of meat | -.30\*\* [-.47, -.11] | -.40\*\*\* [-.56, -.22] | -.16 |

*Note*. Effects are Pearson’s correlations (*r*). Correlational analyses were on the full sample.  
Moral column: Sum of moral and ecological current reasons response scores.   
Health column: sum of health current reasons response scores.   
The authors of the target article stated that the sample sizes used for these correlational analyses ranged from 95 to 104. Based on a reviewer’s request, we calculated 95% CIs based on the smallest of the range *n* = 95 (with the help of code in Jane et al., 2024).  
Significance of correlations was extracted from the target article. \**p* < .05; \*\**p* <.01; \*\*\**p* <.001.   
The corresponding measures for each variable can be found in Table 5.

The authors concluded that compared to health-origin vegetarians, moral-origin vegetarians had more reasons for being a vegetarian (Hypothesis 1: *ds* = 0.80, 95% CI [0.28, 1.33]) and indicated more reasons for being a vegetarian that were neither moral nor health related (Hypothesis 2: *ds* = 0.60, 95% CI [0.09, 1.12]). The authors also concluded that compared to health-origin vegetarianism, moral-origin vegetarians indicated stronger disgust toward meat (Hypothesis 4: *ds* = 0.92, 95% CI [0.38, 1.46]; see correlational analyses in Table 3), and more personality reasons (Hypothesis 6: *ds* = 0.90, 95% CI [0.36, 1.43]; see correlational analyses in Table 3). They further argued that moral-origin vegetarians also experienced stronger emotional reactions to eating meat than health vegetarians. They showed that the correlations between emotional reactions to the eating of meat and total current moral reasons (*r* = .81) was descriptively greater than that between emotional reactions to the eating of meat and total current health reasons (*r =* .30), even after partialling out the effect of the total current health reasons (*r* = .79). Realistically, these correlations only provided indirect support for Hypothesis 5 – they only demonstrate that higher agreement with moral reasons in vegetarians were associated with higher emotional reactions and that this association was descriptively stronger than that between the agreement with health reasons and emotional reactions. For this current replication, we proposed additional analyses to test Hypothesis 5 more stringently (see “Analysis Strategy” subsection of the Methods section).

This conclusion was likely misaligned given that the lack of support for an effect does not imply the absence of an effect (Altman & Bland, 1995).

## Pre-registration and open-science

The project received ethical approval from University of Hong Kong Research Ethics Committee (EA240437). We provided all materials, data, and code on: <https://osf.io/5azdg/>.  [To be updated in Stage 2:] This project received Peer Community in Registered Reports Stage 1 in-principle acceptance ((Enter link); (Enter link)) after which we created a frozen pre-registration version of the entire Stage 1 packet (Enter link) and proceeded to data collection. [To be updated after Stage 2 endorsement:] It has then gone through peer review and officially endorsed by Peer Community in Registered Reports ([Endorsement citation]; [Endorsement link]). All measures, manipulations, exclusions conducted for this investigation are reported, and data collection was completed before analyses. There are no other unreported/unlinked pre-registrations for this project. This Registered Report was written using a Registered Report template by Feldman (2023).

# Method

[IMPORTANT: Method and results were written using a randomized dataset produced by Qualtrics to simulate what these sections will look like after data collection. These will be updated following the data collection. For the purpose of the simulation, we wrote things in past tense, but no pre-registration or data collection took place yet.]

## Power and sensitivity analyses

To determine the minimum sample size (i.e., sample size needed to detect the smallest effect in the target study) required to replicate the hypotheses that the authors found support for in the target article (i.e., met the significance threshold), we conducted power analysis using the safeguard power approach. The safeguard power approach (Perugini et al., 2014) is a conservative method , aiming to protect against an overestimation of true effect sizes. It suggests that the effect size replications should aim their power analyses to detect the lower bound of target article’s effect size 60% confidence intervals.

Note that we exclusively focused our power calculations on the independent t-tests because the hypotheses in the original article were primarily tested with independent t-tests, with correlations only used tangentially as supporting evidence. The authors of the target article also did not provide the specific sample size for each correlation analysis (they only stated that sample sizes ranging from 95 to 104 were used), so we were not able to accurately compute CIs for the reported correlations to use as input for the safeguard power calculations. We therefore calculated the effect sizes and CIs from the t-values of the t-tests. Further details regarding the following power calculations and the packages used are provided in the “Power Analysis” section of the supplementary materials.

Taking the lower bound of the 60% CI of the original effect sizes as conservative estimates, our safeguard power analyses indicated that the minimum required total sample size should be 302 (151 per group) to have 95% power at an alpha of .05 to detect the smallest effect (*ds* = 0.60) that was statistically significant in the target article.

The core analyses of the original study (and by extension the current replication attempt) only used data from a subset of the full sample – i.e., data from participants in the moral-origin group and those in the health-origin group. Therefore, the minimum total sample size required by both lines of analysis described above refers to the total number of moral-origin vegetarians and health-origin vegetarians in the sample, *not* the total number of participants recruited. Therefore, to maximize our chances of recruiting sufficient moral-origin vegetarians and health-origin vegetarians and given available funding, we aimed to recruit a total sample of 830 participants. We accommodate the possibility that ~10% of our total sample will *not* be classified as moral-origin vegetarians or health-origin vegetarians, the total number of moral-origin vegetarians and health-origin vegetarians recruited would be 755. With a sample size of 755, our sensitivity power analyses suggest that our one-sided t-tests will have 95% power at an alpha of .05 to detect effect sizes as small as *ds* = 0.24.

## Participants

[To demonstrate what the results would look like after data collection we simulated a dataset of 830 participants using Qualtrics’s simulation function and reported our analyses below based on that dataset. Results will later be updated with the results using the real data.]

We recruited a total of 830 US American participants completed the study using Prolific (Palan & Schitter, 2018; *Mage* = 59.70, *SD* = 23.48; 205 females, 215 males, 188 other, 222 did not disclose). We note that 1000 subjects began the survey but 170 did not proceed beyond the consent and verifications. We summarized a comparison of the target article sample and the replication samples in Table 4. To ensure we only recruited vegans or vegetarians, we used Prolific’s “Diet” filter to exclude non-vegans and non-vegetarians. We restricted the location to the US using “standard sample”, we set it to: “Nationality: United States”, “Country of birth: United States”, “Place of most time spent before turning 18: United States”, “Minimum Approval Rate: 95, Maximum Approval Rate: 100”, “Minimum Submissions: 100, Maximum Submissions: 10000”].

[Stage 1 note: We will first pretest the survey duration and technical feedback with 30 participants to make sure our time run estimate was accurate and adjusted pay as needed. The data of these 30 participants will not be analyzed to test the outlined hypotheses in this paper prior to full data collection, other than to assess survey completion duration, feedback regarding possible technical issues and payment, and needed pay adjustments. Unless in the case of serious technical issues that affect data quality and require survey modification, these participants will be included in the overall analyses conducted with the full sample. ]

[An example placeholder, to be updated in Stage 2: We first pretested survey duration with 30 participants to test time run estimate and adjusted pay based on the duration. The data of the 30 participants was not analyzed other than to assess technical issues, survey completion duration, and needed pay adjustments, and were included in the final data analysis.]

[The assignment pay is based on the federal wage of 7.25USD/hour, per minute, so for example 5-8 minutes survey would be paid 1 USD per participant.]

###### Table 4 *Difference and similarities between the target article and the replication*

|  |  |  |
| --- | --- | --- |
|  | Rozin et al. (1997) | Replication |
| Sample size | 104 | 830 | |
| Moral-origin | 36 | TBD | |
| Health-origin | 26 | TBD | |
| Geographic location | US | Prolific (US) | |
| Gender | 34 males, 69 females, 1 did not report | 215 males, 205 females, 188 other, 222 did not disclose | |
| Religion | 41 agnostic, 19 Jewish, 11 Catholic, 11 Protestant, 20 other | 107 Christian, 112 Muslim, 102 Buddhist, 104 Jewish, 93 Hindu, 101 Atheist, 115 other, 96 did not disclose | |
| Median age (years) | NA | TBD | |
| Average age (years) | 26.6 | TBD | |
| Standard deviation age (years) | 8.95 | TBD | |
| Age range (years) | NA | 18-98 | |
| Medium (location) | Mailed questionnaires | Computer (online) | |
| Compensation | 1.00 USD | TBD (based on pre-testing) | |
| Year | 1987 | 2024 | |

*Note*. Moral-origin = moral-origin vegetarians; participants who listed moral and/or ecological reasons and no health reasons among the first reasons for becoming a vegetarian/vegan. Health-origin = health-origin vegetarians; participants who listed health reasons and no moral/ecological reasons among the first reasons for becoming a vegetarian/vegan.

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## Design and procedure

[*For review: The Qualtrics survey .QSF file and an exported DOCX file are provided on the OSF folder. You may access a preview of the Qualtrics survey with the following link:* [*https://hku.au1.qualtrics.com/jfe/preview/previewId/b2fc4496-2712-45e5-9d40-f08908bb0d8d/SV\_cNisiPsyzdzKxAW?Q\_CHL=preview&Q\_SurveyVersionID=current*](https://hku.au1.qualtrics.com/jfe/preview/previewId/b2fc4496-2712-45e5-9d40-f08908bb0d8d/SV_cNisiPsyzdzKxAW?Q_CHL=preview&Q_SurveyVersionID=current) *]*

This study was conducted online via Qualtrics. Participants first indicated their consent, with four questions confirming their eligibility, understanding, and agreement with study terms, which they must answer with a “yes” and required responses in order to proceed to the study. Three of the four questions also served as attention checks, with a randomized display order of the options (yes, no, not sure) - 1) “Are you able to pay close attention to the details provided and carefully answer questions that follow?”, 2) “Do you understand the study outline and are willing to participate in a survey with comprehension checks?”, and 3) “Are you a native English speaker born, raised, and currently located in the US?”. Failing any of the three questions meant that the participants did not indicate consent and therefore could not embark on the study. These were followed by writing or copy-pasting a statement indicating that they understand and agree and terms, which participants had to enter correctly in order to proceed, with as many attempts as needed. Upon completion of these steps, participants proceeded to begin the survey.

Participants were then presented measures of the following sections in random order: attitudes towards the consumption of animal meats/products, questions related to reasons for avoiding meat, and reactions towards the sensory qualities of meat. At the end of the survey, participants were tasked to respond to a set of demographics and funneling questions and were debriefed. We summarized the design of the current replication in Table 5; deviations from the original study were detailed in the “Comparisons and deviations” section of the supplementary materials.

###### Table 5 *Replication: Measures*

|  |
| --- |
| **Current attitudes towards the consumption of animal meats**  “Please rate your *current* attitude towards eating the following animal meats/products:”  (1 = *Readily eat*, 2 = *Reluctantly eat,* 3 = *Refuse to eat)*  Range of animal meats  Pork, Veal, Lamb/Mutton, Beef, Chicken, Fish, Shellfish, Eggs, Milk |
| **Reasons for avoiding meat**  “Below is a list of 20 possible reasons for avoiding meat. Please indicate how much you *currently* agree with each reason. Please interpret the term “meat” as beef, unless you do not avoid eating beef. If this is the case, please select another animal product that you are reluctant to eat in order to stand for the word “meat” in the reasons. I resist [avoid] eating meat because...”  (1 = *Disagree strongly*, 5 = *Agree strongly*)  Moral   1. It increases pain and suffering in animals. 2. It requires the killing of animals. 3. It violates the animal’s rights. 4. Eating meat is against my religious beliefs and/or I am a member of a group or movement that rejects meat as food. 5. We demean ourselves by raising animals for food, and killing them.   Ecology   1. It is wasteful of resources to eat animal rather than vegetable products, especially in a world where people are starving. 2. It is not natural for people to eat meat; we are not carnivores.   Health   1. A diet containing meat is not as healthy as a vegetarian diet. 2. A diet with at least moderate amounts of meat is unhealthy. 3. Eating meat is bad for my physical appearance. 4. Even a diet that contains small amounts of meat is unhealthy.   Appeal   1. I like the idea of being a vegetarian. 2. A vegetarian diet is appealing to me in terms of purification or discipline.   Personal   1. It makes me behave more like an animal. 2. Killing and eating animals makes it easier for us to be aggressive and violent. 3. Eating meat causes undesirable changes in people’s personalities.   Economic   1. Meat is too expensive.   Taste   1. I don’t like the taste of meat.   Disgust   1. Eating meat is offensive, repulsive, or disgusting. 2. Emotionally, I just can’t chew and swallow meat.   **Total current reasons** = sum of all 20 reasons  **Total non-moral, non-health current reasons** = sum of 9 reasons that were not moral, ecological, or health reasons |
| **Time of onset for reasons for avoiding meat**  “Below is a list of 20 possible reasons for avoiding meat. Please indicate the *time of onset* for each reason. Please interpret the term “meat” as beef, unless you do not avoid eating beef. If this is the case, please select another animal product that you are reluctant to eat in order to stand for the word “meat” in the reasons.  I resist [avoid] eating meat because...”  (1 = *This was your first reason for avoiding meat*, 4 = *This was never a reason for avoiding meat*)  Same list of 20 reasons as “reasons for avoiding meat”. |
| **Reactions towards the sensory qualities of meat**  “Please indicate your reactions towards the following sensory qualities of meat:”  (0 = *I have never tried meat;*1 = *Dislike extremely*, 9 = *Like extremely*)  Sensory qualities of meat  Taste of meat; Smell of meat; Texture of meat; Appearance of meat |
| **Disgust**  Disgust was measured with three questions:   1. **Nausea**: “The thought of eating meat makes me nauseous.”   *(True/false;* true recoded to a score of 4, false recoded to a score of zero)   1. **Contamination**: “Consider a soup that you like (would rate 8 or 9). Rate your liking for this soup if a tiny, untastable drop of meat broth accidentally fell into it.”   (1 = *Dislike extremely*, 9 = *Like extremely;* score recoded using this formula: [10 – response score]/2)   1. “I dislike meat because of what it is or where it comes from.”   (*True/false*; note that this question was administered but not included in the composite disgust score as per the target article)  **Elicitation of disgust**: Note that the authors also considered participants’ responses to the question asking about their current reasons for avoiding meat for the reason “Eating meat is offensive, repulsive, or disgusting.” (1 = *Disagree strongly*, 5 = *Agree strongly*) as a measure of disgust. |
| Perceptions of reasons for avoiding meat (exploratory extension) “Below is a list of 20 possible reasons for avoiding meat. Please classify each reason as either a moral reason, a health reason, or a non-moral non-health reason.  (1 = Moral/ecological reason, 2 = Health reason, 3 = Non-moral/ecological and non-health reason)  Same list of 20 reasons as “reasons for avoiding meat”. |
| **Self-identification as a moral or health vegetarian** (exploratory extension)  “Do you primarily identify as a vegetarian for health reasons or a vegetarian for moral reasons?”  (1 = Vegetarian for health reasons, 2 = Vegetarian for moral reasons). |

## Measures



We reconstructed the questions used in the original study using information provided in the target article (see Table 5). We also note that in the original survey some of the terms, like meat and vegetarian appeared in “quotation marks” (e.g., “meat” and “vegetarian”), which may seem like a value-judgement to some participants, and we therefore made the decision to remove the quotation marks from the survey.

### Current attitudes towards the consumption of animal meats/products

Participants rated their current attitudes towards the consumption of nine animal meats/products (pork, veal, lamb, beef, chicken, fish, shellfish, eggs, milk) using a three-point response scale (1 = *Readily eat*, 2 = *Reluctantly eat,* 3 = *Refuse to eat).* Mirroring what was done in the original study, for each participant, we computed the range of animal meats/products rejected for consumption by computing the sum of responses for all nine animal meats/products

### Reasons for avoiding meat

Participants rated how much they currently agreed with a list of 20 possible reasons for avoiding meat that appeared in the original study, using a five-point response scale (1 = *Disagree strongly*, 5 = *Agree strongly*). These reasons fell into one of eight categories: moral, ecology, health, appeal, personal, economic, taste, and disgust (see Table 5). Like in the original study, participants were instructed to interpret the term meat as beef, unless they do not avoid eating beef.

Using these responses, five composite sum scores were calculated for each participant: (1) moral-ecological score (seven reasons), (2) health score (four reasons), (3) total reasons (all 20 reasons), (4) total non-moral, non-health current reasons (11 reasons), and (5) personality reasons (three reasons). As in the original study, participants’ emotional reactions to the eating of meat were indexed by their responses to the reason “Emotionally, I just can’t chew and swallow meat”. Higher scores indicate greater agreement.

### Time of onset for reasons for avoiding meat

Participants rated the time of onset for the same list of 20 possible reasons for avoiding meat using a four-point response scale (1 = *This was your first reason for avoiding meat*, 4 = *This was never a reason for avoiding meat*). Likewise, participants were instructed to interpret the term “meat” as beef, unless they do not avoid eating beef in which case they were asked to think of a different type of meat that they avoid eating.

### Reactions towards the sensory qualities of meat

Participants rated their reactions towards four sensory qualities of meat – the taste of meat, smell of meat, texture of meat, and the appearance of meat – using a nine-point response scale (1 = *Dislike extremely*, 9 = *Like extremely;* participants also had the option to select 0 = *I have never tried meat* for each sensory quality). Mirroring the original study, we calculated an overall sensory score as the sum of these four questions. Higher scores indicate a greater liking of the sensory qualities of meat.

### Disgust

Participants answered three questions that measured disgust. Note that the authors also considered participants’ current agreement (1 = *Disagree strongly*, 5 = *Agree strongly*) to the reason “Eating meat is offensive, repulsive, or disgusting” in the question asking about their reasons for avoiding meat as a measure of the elicitation of disgust. As in the original study, overall disgust was calculated as the sum of three out of four disgust items (see Table 5). Higher scores were indicative of greater overall disgust.

### Perception of reasons for avoiding meat (exploratory extension)

To determine how participants perceived each of the 20 possible reasons for avoiding meat, participants were instructed to classify each reason using a three-point response scale (1 = *moral/ecological reason*, 2 = *health reason*, 3 = *non-moral/ecological and non-health reason*).

### Self-identification as a moral or health vegetarian (exploratory extension)

Participants were asked if they self-identified primarily as a moral vegetarian or as a health vegetarian with the following question: “Do you primarily identify as a vegetarian for health reasons or a vegetarian for moral reasons?” (1 = *Vegetarian for health reasons*, 2 = *Vegetarian for moral reasons*).

## Deviations

We summarized the adjustments we made to the original study design in the “Comparisons and deviations” section of the supplementary material.

## Evaluation criteria for replication findings

We aimed to compare the replication effects with the original effects with the framework proposed by LeBel et al. (2019) using Cohen’s *ds*\* (Delacre et al., 2021) as our metric of comparison. Cohen’s *ds*\* was chosen as our standardized effect size measure here because we refrained from assuming equal variances in our tests of the replication effects (hence our use of Welch’s t-tests instead of Student’s t-tests; for more details, see the “Data analysis strategy” section). In line with the interpretative framework proposed by LeBel et al. (2019), we determined the consistency of replication and original effects by examining if the two-sided 90% confidence interval of the replication effect size estimate included the point estimate of its corresponding original effect size estimate (see the “Replication versus the original” section of the supplementary material).

The current replication attempt will be considered a successful replication if of the five hypotheses (Hypotheses 1, 2, 4, 5, and 6), four or five were supported, a mixed replication if two or three were supported, and a failed replication if one or none of the hypotheses were supported.

## Replication closeness evaluation

We provided details on the classification of the replications using the criteria by LeBel et al. (2018) in Table 7 (see also the “Replication closeness” section of the supplementary material). We summarized the replication as a close replication.

###### Table 7 *Deviations and replication classification (based on LeBel et al., 2018)*

|  |  |  |
| --- | --- | --- |
| **Design facet** | **Replication** | **Details of deviation** |
| Effect/hypothesis | Same |  |
| IV construct | Same |  |
| DV construct | Same |  |
| IV operationalization | Same |  |
| DV operationalization | Similar | Measures were presented in random order. |
| IV stimuli | Similar | * Replaced “lamb” with “lamb/mutton” in the list of consumable animal meats. * Replaced “Of the appeal (in terms of purification or discipline) of a vegetarian diet” with “A vegetarian diet is appealing to me in terms of purification or discipline. |
| DV stimuli | Similar | * Added a matrix of questions that asks participants to categorize each reason for meat avoidance as either a moral/ecological reason, a health reason, or a non-moral/ecological and non-health reason. * Added a question to ask participants if they self-identify primarily as a moral vegetarian or a health vegetarian * Removed open-ended questions about meat avoidance asked in the original study. |
| Procedural details | Different | Religious vegetarians/vegans were not excluded at the beginning of the study, solely based on their reported religion. |
| Physical settings | Different | The original study recruited participants from an American university campus and a natural food store located in the university’s community. Questionnaires were mailed to participants if they were recruited on campus or handed to participants by the cashier if they were recruited from the natural food store. In the current replication attempt, the questionnaires were administered over Qualtrics and completed by a sample of online Prolific participants. |
| Contextual variables | Different |  |
| Population (e.g., age) | Different |  |
| Replication classification | Close replication |  |

## Data analysis strategy

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### Replication: As in the original

In the original study, Hypotheses 1, 2, 3, 4, 6, and 7 (see Table 1) were primarily tested with group comparisons between moral-origin vegetarians and health-origin vegetarians using two-sided t-tests (see Table 2). We mirrored these t-tests in the current replication attempt. Note that there are two key differences in our analysis plan. First, we used Welch’s t-tests instead because it has been demonstrated that they perform better than Student’s t-tests when the assumption of homogeneity of variances is violated (Delacre et al., 2017) – although not explicitly stated, it is very likely that the authors used Student’s t-tests as their df calculations seem to indicate that equal variances were assumed by the t-tests they performed. Second, we performed one-sided tests because all seven of the original hypotheses were directional. Using data from the full sample, we also mirrored the correlational analyses conducted in the original study (see Table 3).

### Replication: Additional analyses

In the original study, the authors claimed to have found substantiating support for their hypotheses (Hypotheses 4 to 7; Table 1) – that there are group differences between moral vegetarians and health vegetarians in the correlations between variables – by examining the descriptive differences in magnitude between correlations (for example, the correlation between the elicitation of disgust and total moral-ecological score and that between the elicitation of disgust and total health score) and the statistical significance of each correlation. We aimed to improve on their method with formal statistical tests of the differences between correlations (Diedenhofen & Musch, 2015): Using Zou’s confidence interval method (Zou, 2007) as implemented in the *cocor* R package (Diedenhofen & Musch, 2015), we sought to examine whether the differences between correlations with summed moral-ecological score and summed health score for the variables of interest – overall disgust, emotional reactions to eating meat, personality reasons, taste of meat, smell of meat, texture of meat, and appearance of meat – in the full sample are different. We note that these analyses are only meant as a pre-registered refinement of the original article’s approach; the findings of these analyses will not be used to test Hypotheses 4, 5, 6, and 7, and are therefore not a criterion for replication success.

As we discussed in the introduction, the correlations reported in the original article only provided indirect support for Hypothesis 5 as they only realistically demonstrate that higher agreement with moral reasons in vegetarians were associated with higher emotional reactions to eating meat and that this association was descriptively stronger than that between the agreement with health reasons and emotional reactions. Unfortunately, the authors’ use of data from the full sample precluded any inference of group differences between moral and health vegetarians. We therefore aimed to conduct a more stringent test of Hypothesis 5 and decided to include a one-sided Welch’s t-test of the differences between moral-origin vegetarians and health-origin vegetarians on emotional reactions to eating meat.

### Outliers and exclusions

Using the available recruitment filters on Prolific, we only recruited vegans and vegetarians (successfully used in Jacobs et al., 2024’s successful replication of Bastian et al., 2012). As a validation of Prolific’s qualifiers, participants were also asked the following yes/no question at the beginning of the survey: “This survey is only intended for vegan or vegetarians only. Are you a vegan or vegetarian?”. We did not classify outliers beyond that and will include all the data collected for those who successfully completed the entire survey.

# Results

[IMPORTANT: Method and results were written using a randomized dataset produced by Qualtrics to simulate what these sections will look like after data collection. These will be updated following the data collection. For the purpose of the simulation, we wrote things in past tense, but no pre-registration or data collection took place yet.]

[For Stage 2: Editor raised possible inconsistencies with stat-check on the statistics using the simulated data, which could be due to the use of one-sided tests or some artifact with the simulated data. In Stage 2, we will check statistical results using the real data against stat-check and work out any inconsistencies.]

Of the full sample of 830 participants, 213 participants were classified as moral-origin vegetarians (listed moral and/or ecological reasons and no health reasons among the first reasons for becoming a vegetarian/vegan) and 75 participants were classified as health-origin vegetarians (listed health reasons and no moral/ecological reasons among the first reasons for becoming a vegetarian/vegan). We summarized the descriptives of the replication in Table 8 and the correlations between our measures of interest and moral ecological and health scores in Table 9. We plotted the results of our replication in Figure 1. We concluded a failure to find support for all seven of the original hypotheses.

## Initial validations

### Validation of reasons categorization

[Placeholder for analysis verifying Rozin et al. (1997)’s reasons classification with our exploratory extension. Replication success will depend on the target article’s categorization of the reasons. However, if the categorization of the reasons by the participants does not align with the authors’ then in the case of a successful replication we will conclude it as a “successful replication with reservations”.]

### Validation of vegetarian type categorization

[Placeholder for analysis verifying Rozin et al. (1997)’s vegetarian categorization and self-identification. As the current replication attempt is a direct replication of Rozin et al. (1997), we chose to retain the author’s method of classifying participants as moral or health vegetarians – using self-reported time of onset on a pre-categorized set of reasons for vegetarianism. We will validate Rozin et al. (1997)’s method of classifying participants as moral or health vegetarians, we will check the alignment between participants’ self-identification and the categorization of health/moral-origin vegetarians by Rozin et al. (1997). We also pre-register that if we fail to validate Rozin et al. (1997)’s method of classifying participants as moral or health vegetarian, or if more than 10% of the sample will not be moral/health-origin vegetarians according to their method, then we will also report the analyses using participants’ self-identification as a moral or health vegetarian to test the seven original hypotheses. In that case, replication success will still be determined based on the analyses using the target article’s original criteria, yet in the case of inconsistent conclusions based on the two analyses our replication conclusion will be noted as “with reservations” with added details about the inconsistency and likely cause.]

We note that in our manuscript when we refer to moral-origin and health-origin vegetarians we are referring to those who - using this method - were classified as either moral or health vegetarians.

For consistency, all effect size measures (and their respective two-sided 90% confidence intervals) reported for the replications and extensions were computed using the deffectsize package (Delacre et al., 2021).

### Hypothesis 1: Reasons for being a vegetarian

We found no support for Hypothesis 1 – that moral-origin vegetarians have more current reasons for being a vegetarian than health-origin vegetarians (moral-origin vegetarians: *M* = 60.60, *SD* = 6.25; health-origin vegetarians: *M* = 60.19, *SD* = 6.21; *t*(130.51) = 0.49, *p* = .312, *ds*\* = 0.07, 90% CI [-0.16, 0.29]). Using LeBel et al. (2019)’s criteria, the original effect size associated with this hypothesis was in the same direction, larger than the replication effect size, but not included in the replication confidence interval. Therefore, we conclude a failed replication of Hypothesis 1 of Rozin et al. (1997).

### Hypothesis 2: Reasons for being a vegetarian that are not moral or health related

We did not find support for Hypothesis 2 – that moral-origin vegetarians have more current reasons for being a vegetarian that are neither moral nor health reasons than health-origin vegetarians (moral-origin vegetarians: *M* = 27.07, *SD* = 4.08; health-origin vegetarians: *M* = 27.52, *SD* = 4.41); *t*(121.32) = -0.77, *p* = .78; *ds*\* = -0.11, 90% CI [-0.33, 0.12]). Using LeBel et al. (2019)’s criteria, the original effect size associated with this hypothesis was in the opposite direction, larger than the replication effect size, and not included in the replication confidence interval. Therefore, we conclude a failed replication of Hypothesis 2 of Rozin et al. (1997).

### Hypothesis 3: Range of animal meats/products rejected

We did not find support for Hypothesis 3 – that that the range of animal meats rejected for consumption by moral-origin vegetarians (*M* = 18.18, *SD* = 2.52) was wider than that by health-origin vegetarians (*M* = 18.68, *SD* = 2.53; *t*(129.18) = -1.48, *p* = .929, *ds*\* = -0.20, 90% CI [-0.42, 0.02]).

We found no indication for the association between disgust and moral-ecological score as greater than that between disgust and summed health score (*rmoral*= 0.02, *rhealth*= 0.001; Zou’s 95% CI [-0.08, 0.11]). We found no support for Hypothesis 4 – that moral-origin vegetarians (*M* = 7.50, *SD* = 2.89) indicate stronger disgust toward meat than health-origin vegetarians (*M* = 7.77, *SD* = 2.74); *t*(135.75) = -0.71, *p* = .76; *ds*\* = -0.10, 90% CI [-0.31, 0.12]). Using LeBel et al. (2019)’s criteria, the original effect size associated with this hypothesis was in the opposite direction, larger than the replication effect size, and not included in the replication confidence interval. Therefore, we conclude a failed replication of Hypothesis 4 of Rozin et al. (1997).

### Hypothesis 5: Emotional reactions to eating meat

We found no indication for the association between emotional reactions to meat and moral-ecological score as greater than the association between emotional reactions to meat and summed health score (*rmoral* = 0.01, *rhealth* = -0.03; Zou’s 95% CI [-0.05, 0.14]). We found no support for Hypothesis 5 – that moral-origin vegetarians (*M* = 3.10, *SD* = 1.45) have more emotional reactions to the eating of meat than health-origin vegetarians (*M* = 3.03, *SD* = 1.39); *t*(134.53) = 0.40, *p* = .34; *ds*\* = -0.05, 90% CI [-0.17, 0.27]).

### Hypothesis 6: Personality-related reasons for vegetarianism

We found no indication for the association between personality reasons and moral-ecological score as greater than the association between personality reasons and health score (*rmoral*= 0.03, *rhealth* = 0.01; Zou’s 95% CI [-0.07, 0.12]). We found no support for Hypothesis 6 – that moral-origin vegetarians (*M* = 9.27, *SD* = 2.35) have more personality-related reasons for being a vegetarian than health-origin vegetarians (*M* = 9.31, *SD* = 2.35); *t*(129.55) = -0.12, *p* = .55; *ds*\* = -0.02, 90% CI [-0.24, 0.20]). Using LeBel et al. (2019)’s criteria, the original effect size associated with this hypothesis was in the opposite direction, larger than the replication effect size, and not included in the replication confidence interval. Therefore, we conclude a failed replication of Hypothesis 6 of Rozin et al. (1997).

### Hypothesis 7: Sensory reactions

None of the associations between the hedonic qualities of meat: taste (*rmoral*= -0.03, *rhealth*= 0.05; Zou’s 95% CI [-0.17, 0.02]), smell (*rmoral*= 0.01, *rhealth*= 0.02; Zou’s 95% CI [-0.10, 0.09]), texture (*rmoral*= 0.04, *rhealth*= 0.04; Zou’s 95% CI [-0.10, 0.09]), and appearance (*rmoral*= -0.02, *rhealth*= -0.01; Zou’s 95% CI [-0.11, 0.08]) and moral-ecological score were greater than the associations between the hedonic qualities of meat and health score.

We found no support for Hypothesis 7 – that moral-origin vegetarians (*M* = 18.45, *SD* = 5.73) are more likely to have negative reactions to the taste, smell, texture, or appearance of meat than health vegetarians (*M* = 17.79, *SD* = 5.76); *t*(128.96) = 0.85, *p* = .20; *ds*\* = 0.12, 90% CI [-0.11, 0.34]).

Table 8*Replication: Descriptive statistics*

| Dependent variables | Moral-origin (*n* = 213) | Health-origin (*n* = 75) |
| --- | --- | --- |
| Total Current Reasons | 60.60 (6.25) | 60.19 (6.21) |
| Total NMNH current reasons | 27.07 (4.08) | 27.52 (4.41) |
| Animal meats/products rejected for consumption | 18.18 (2.52) | 18.68 (2.53) |
| Overall disgust | 7.50 (2.89) | 7.77 (2.74) |
| Emotional reactions to eating meat | 3.10 (1.45) | 3.03 (1.39) |
| Personality reasons | 9.27 (2.35) | 9.31 (2.35) |
| Overall sensory score | 18.45 (5.73) | 17.79 (5.76) |

*Note*. Values are Mean (*SD*). Moral-origin = moral-origin vegetarians; participants who listed moral and/or ecological reasons and no health reasons among the first reasons for becoming a vegetarian/vegan. Health-origin = health-origin vegetarians; participants who listed health reasons and no moral/ecological reasons among the first reasons for becoming a vegetarian/vegan. NMNH = non-moral, non-ecological, and non-health.

###### 

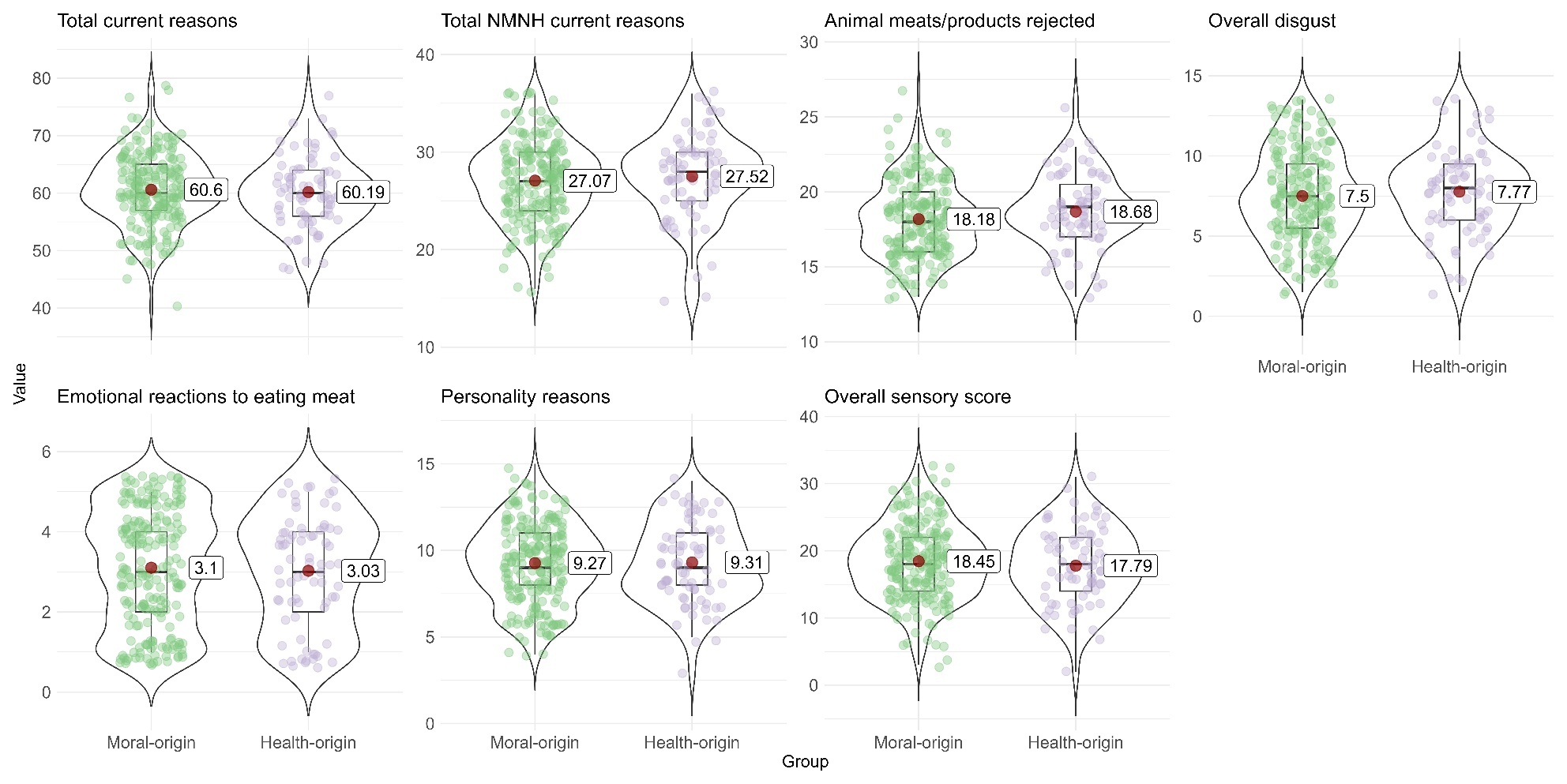


###### Table 9*Summary of Pearsons’ correlations between variables of interest and moral/health composite scores*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | Correlation (*r*) | | |
| Hypothesis | Variable | Moral | Health | Moral with health partialled out |
| 4 | Nausea | 0.00 [-0.07,0.07] | 0.03 [-0.04,0.09] | 0.00 |
| Contamination | -0.04 [-0.11,0.03] | 0.05 [-0.02,0.11] | -0.04 |
| Elicitation of disgust | 0.00 [-0.07,0.06] | 0.01 [-0.06,0.08] | 0.00 |
| Overall disgust | 0.02 [-0.05,0.09] | 0.00 [-0.07,0.07] | 0.02 |
| 5 | Emotional reactions to eating meat | 0.01 [-0.05,0.08] | -0.03 [-0.1,0.04] | 0.01 |
| 6 | Personality reasons | 0.03 [-0.04,0.1] | 0.01 [-0.06,0.07] | 0.03 |
| 7 | Taste of meat | -0.03 [-0.09,0.04] | 0.05 [-0.02,0.12] | -0.03 |
| Smell of meat | 0.01 [-0.06,0.08] | 0.02 [-0.05,0.09] | 0.01 |
| Texture of meat | 0.04 [-0.03,0.10] | 0.04 [-0.03,0.11] | 0.03 |
| Appearance of meat | -0.02 [-0.09,0.04] | -0.01 [-0.08,0.06] | -0.02 |

*Note*. Moral = sum of moral and ecological current reasons response scores. Health = sum of health current reasons response scores. Data from the full sample was used in these correlational analyses. 95% confidence intervals are presented within square brackets. \**p* < .05; \*\**p* <.01; \*\*\**p* <.001. The corresponding measures for each variable can be found in Table 5.

###### Figure 1 *Differences between moral- and health-origin vegetarians (Replication DVs)*

**

*Note*. Moral-origin = moral-origin vegetarians; participants who listed moral and/or ecological reasons and no health reasons among the first reasons for becoming a vegetarian/vegan. Health-origin = health-origin vegetarians; participants who listed health reasons and no moral/ecological reasons among the first reasons for becoming a vegetarian/vegan. NMNH = non-moral, non-ecological, and non-health. The red dot in each plot indicates the mean value for the respective DV; said mean value is presented in a box to the right of each red dot. Please note that the y-axis for each plot has a different scale.

# Discussion

[Potential addition of citations to be included in the discussion of our Stage 2 based on feedback from reviewer Dr./Prof. Ben De Groeve: Benningstad and Kunst (2020); Buttlar et al. (2024); De Groeve et al. (2022); Schein and Gray (2018).]

[Planned discussion for Stage 2: We originally had several suggestions for extensions, yet given reviewer feedback decided to focus our replication on the replication. We will briefly suggest the extensions we removed as future directions and potentially add reviewers’ suggestions offered in the peer review process as improvements to the removed extensions.]

[Planned discussion for Stage 2: We plan to discuss challenges and identified weaknesses in the target article’s methods. For example, reviewer Dr./Prof. Ben De Groeve noted issues with some of the reasons items as confounding several reasons. Another important example is Dr./Prof. Willem Sleegers’s point regarding the classification of vegetarians based on reasons, that may lead to many in the sample not included in the analyses. We included extensions and supplementary analyses to address these points, yet they warrant further discussion and suggested remedies.]

[Planned discussion for Stage 2: We tried to follow the target article’s method as closely as possible, yet we note several decisions by the authors that we found puzzling, which we will outline and discuss in Stage 2 as potential improvements for future research. Example: participants were instructed to interpret the term meat as beef, unless they do not avoid eating beef.]

# Conclusion

[NOTE: the simulated replication findings detailed here **MUST NOT** be interpreted – they only serve as an example of how we plan to analyze the data and report our findings after data collection. This section is a placeholder example, will be updated in Stage 2]

We concluded that the findings of our simulated replication findings are not consistent with those found in the original study, and that we have failed to replicate the findings detailed in the target article.

# References

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1. See Nosek et al. (2022) for definitions of the terms “reproducibility” and “replicability”. [↑](#footnote-ref-2)
2. We note the following. First, effect sizes and their confidence intervals were not originally reported in the target article. For comprehensiveness, we computed and reported two effect size measures from the results of the recomputed t-tests here: Cohen’s *d*s and Cohen’s *ds*\* (see Table 2). Cohen’s *d*s is computed by dividing the raw sample mean difference of the variable of interest by the pooled error term of the two groups, whereas Cohen’s *ds* is computed by dividing the raw sample mean difference by the square root of the non-pooled average of both group’s variance estimates. The former effect size measure is conventionally reported when Student’s t-tests are used (assuming equal variance), as is most likely what was done in the target article. The latter effect size measure (note that other authors label this effect size estimator Cohen’s *dav* instead; we use the notation Cohen’s *ds\** to be consistent with that used in Delacre et al., 2021) was computed to facilitate comparisons between the original effects and replication effects (see the “Evaluation criteria for replication findings” section). Second, we were not able to recompute the exact p-values and 95% CIs for the correlational analyses (Table 3) performed in the target article because the exact sample size used for each correlation was not clearly reported – the authors only mentioned that the sample sizes used for the correlations ranged from 95 to 104. Third, readers should note that while all the hypotheses (Table 1) made by the authors (and by extension, their claims) were directional in nature, all the statistical tests described above were two-sided tests. [↑](#footnote-ref-3)